



# Digital Video Recorder

## User Manual

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## Hikvision® Network Digital Video Recorder User Manual

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Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact dealer.  
This manual is applicable to following embedded network DVR series.

Series	Model	Type
9100HFI-ST Series	DS-9104/08/16HFI-ST	Network DVR
9100HWI-ST Series	DS-9104/08/16HWI-ST	Network DVR
9100HFI-RT Series	DS-9104/08/16HFI-RT	Network DVR
9100HFI-XT Series	DS-9116HFI-XT	Network DVR
9000HFI-ST Series	DS-9004/08/16HFI-ST	Network HDVR
9000HWI-ST Series	DS-9004/08/16HWI-ST	Network HDVR
9000HFI-RT Series	DS-9004/08/16HFI-RT	Network HDVR
9000HFI-XT Series	DS-9016HFI-XT	Network HDVR
8100HFI-ST Series	DS-8104/08/16HFI-ST	Network DVR
8100HWI-ST Series	DS-8104/08/16HWI-ST	Network DVR
8000HFI-ST Series	DS-8004/08/16HFI-ST	Network HDVR
8000HWI-ST Series	DS-8004/08/16HWI-ST	Network HDVR
7200HWI-SV Series	DS-7208/16HWI-SV	Network DVR
7200HFI-SV Series	DS-7208/16HFI-SV	Network DVR
7600HI-ST Series	DS-7604/08/16HI-ST	Network HDVR

This manual may contain several technically incorrect places or printing errors, and the content is subject to change without notice. The updates will be added into the new version of this manual. We will readily improve or update the products or procedures described in the manual.

In order to simplify the description, we make the following conventions (unless otherwise stated):

We define DS-9100HFI-ST, 9100HWI-ST, 9100HFI-RT, 9100HFI-XT, 8100HFI-ST, 8100HWI-ST, 7200HWI-SV and 7200HFI-SV series as **DVR**, and 9000HFI-ST, 9000HWI-ST, 9000HFI-RT, 9000HFI-XT, 8000HFI-ST, 8000HWI-ST and 7600HI-ST series as **HDVR** (Hybrid DVR) in this manual.

The front panel operation is not supported by 7200HWI-SV, 7200HFI-SV and 7600HI-ST series.

The figures shown in this manual are for reference only. The appearance and interface of the device are subject to the actual model.

## Regulatory information

### FCC information

**FCC compliance:** This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### FCC conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

## EU Conformity Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: [www.recyclethis.info](http://www.recyclethis.info).



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: [www.recyclethis.info](http://www.recyclethis.info).



## Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

# Product Key Features

## General

- Connectable to the network cameras, network dome and encoders (this feature is supported by DS-9000HFI-ST/RT/XT (HWI-ST) & DS-8000HFI-ST series).
- Connectable to the third-party network cameras like ACTI, Arecont, AXIS, Brickcom, Bosch, Canon, PANASONIC, Pelco, SAMSUNG and SANYO, SONY, Vivotek and ZAVIO (this feature is supported by HDVR series).
- Connectable to the third-party cameras that adopt ONVIF or PSIA protocol.
- PAL/NTSC adaptive video inputs.
- H.264 video compression with high reliability and superior definition.
- Each channel supports dual-stream.
- Up to 32 network cameras can be added (this feature is supported by HDVR series).
- Independent configuration for each channel, including resolution, frame rate, bitrate, image quality, etc.
- The quality of the input and output video is configurable.
- Each channel supports two kinds of compression parameters, the normal continuous and event. Sub-stream can be configured locally.
- Encoding for both audio/video composite stream and video stream; audio and video synchronization during composite stream encoding.
- Support CABAC (this feature is supported by analog cameras only).
- Watermark technology.

## Local Monitoring

- Simultaneous HDMI, VGA and CVBS outputs.
- HDMI output and VGA output at up to 1920×1080P resolution.
- 1/4/6/8/9/16-division live view is supported, and the display sequence of screens is adjustable.
- Live view screen can be switched in group, and manual switch and automatic cycle review is also provided, the interval of automatic cycle can be adjusted.
- Quick setting menu is provided for live view.
- The selected live view channel can be shielded.
- Motion detection, tamper-proof, video exception alarm and video loss alarm functions.
- Privacy mask.
- Several PTZ protocols supported; PTZ preset, patrol and pattern.
- Zooming in by clicking the mouse and PTZ tracing by dragging mouse.

## HDD Management

- For DS-9100/9000HFI-XT series, up to 16 SATA hard disks and 2 eSATA disks can be connected; for DS-7200HFI(HWI)-SV & DS-7600HI-ST series, up to 2 SATA hard disks can be connected; and for other models, up to 8 SATA hard disks and 1 eSATA disk can be connected, each disk with a maximum of 4TB storage capacity.
- 8 network disks (8 NAS disks, or 7 NAS disks+1 IP SAN disk) can be connected.
- Support eSATA disk for recording or backup.
- Support RAID0, RAID1, RAID5 and RAID10 storage schemes. And 8 virtual disks can be configurable. (this function is supported by DS-9100/9000HFI-RT series only.)
- HDD hot swap function (supported by DS-9100/9000HFI-RT series only).

- HDD group management.
- Support HDD standby function.
- HDD property: redundancy, read-only, read/write (R/W).
- HDD quota management; different capacity can be assigned to different channel.
- HDD frame-extracting management to extend the record time (this feature is supported by DVR series).
- Support S.M.A.R.T. and bad sector detection (this feature is not supported by DS-9100/9000HFI-RT series).

### **Recording, Capture and Playback**

- Provide new playback interface with easy and flexible operation.
- Holiday recording schedule configuration.
- Normal and event video encoding parameters.
- Multiple recording types: manual, normal, alarm, motion, motion | alarm, motion & alarm.
- 8 recording time periods with separated recording types.
- Pre-record and post-record for alarm, motion detection recording, and pre-record time for schedule and manual recording.
- Searching record files and captured pictures by events (alarm input/motion detection).
- Customization of tags, searching and playing back by tags.
- Locking and unlocking record files.
- Local redundant recording and capture.
- Searching and playing back record files by camera No., recording type, start time, end time, etc.
- Smart search for the selected area in the video.
- Zooming in when playback.
- Reverse playback for multi-channel.
- Supports pause, fast forward, slow forward, skip forward, and skip backward when playback, locating by dragging the mouse.
- For DS-9100/9000/8100HWI-ST, up to 16-ch synchronous playback at WD1 real time; for other models, up to 16-ch synchronous playback at 4CIF real time.
- Manual capture, continuous capture of video images and playback of captured pictures.

### **Backup**

- Export video data by USB, SATA or eSATA device.
- Export video clips when playback.
- Management and maintenance of backup devices.
- Support NTFS and FAT32 formatted backup devices.

### **Alarm and Exception**

- Configurable arming time of alarm input/output.
- Alarm for video loss, motion detection, tampering, abnormal signal, video input/output standard mismatch, illegal login, network disconnected, IP confliction, abnormal record/capture, HDD error, and HDD full, etc.
- Alarm triggers full screen monitoring, audio alarm, notifying surveillance center, sending email and alarm output.
- Automatic restore when system is abnormal.

### **Other Local Functions**

- Users can operate by front panel, mouse, remote control, and control keyboard.
- Three-level user management; admin user is allowed to create many operating accounts and define

their operating permission, which includes the limit to access any camera.

- Operation, alarm, exceptions and log recording and searching.
- Manually triggering and clearing alarms.
- Importing and exporting of device configuration file.

### **Network Functions**

- 2 self-adaptive 10M/100M/1000M network interfaces, and three working modes are configurable: multi-address, load balance and network fault tolerance.
- IPv6 is supported.
- TCP/IP protocol, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, SNMP, NFS, and iSCSI are supported.
- TCP, UDP and RTP for unicast.
- Auto/Manual port mapping and automatically discovered by UPnP™.
- Remote web browser access by HTTPS ensures high security.
- Remote reverse playback by RTSP.
- Support accessing by the platform by ONVIF.
- Remote search, playback, download, locking and unlocking the record files, and downloading files broken transfer resume.
- Remote parameters setup; remote import/export of device parameters.
- Remote viewing of the device status, system logs and alarm status.
- Remote keyboard operation.
- Remote locking and unlocking of control panel and mouse.
- Remote HDD formatting and program upgrading.
- Remote system restart.
- RS-232, RS-485 transparent channel transmission.
- Alarm and exception information can be sent to the remote host
- Remotely start/stop recording.
- Remotely start/stop alarm output.
- Captured pictures can be sent to the FTP server which supports FTP and SFTP protocol, and two FTP servers can be configured (this feature is supported by DS-9100/8100HFI-ST (HWI-ST) & DS-9100HFI-RT/XT series).
- Upgraded by remote FTP server is supported.
- Remote PTZ control.
- Remote JPEG capture.
- Two-way voice talk and voice broadcasting.
- Embedded WEB server.

### **Development Scalability:**

- SDK for Windows and Linux system.
- Source code of application software for demo.
- Development support and training for application system.

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# **Chapter 1 Introduction**

## 1.1 Front Panel

The front panels of the devices are shown in Figure 1.1.

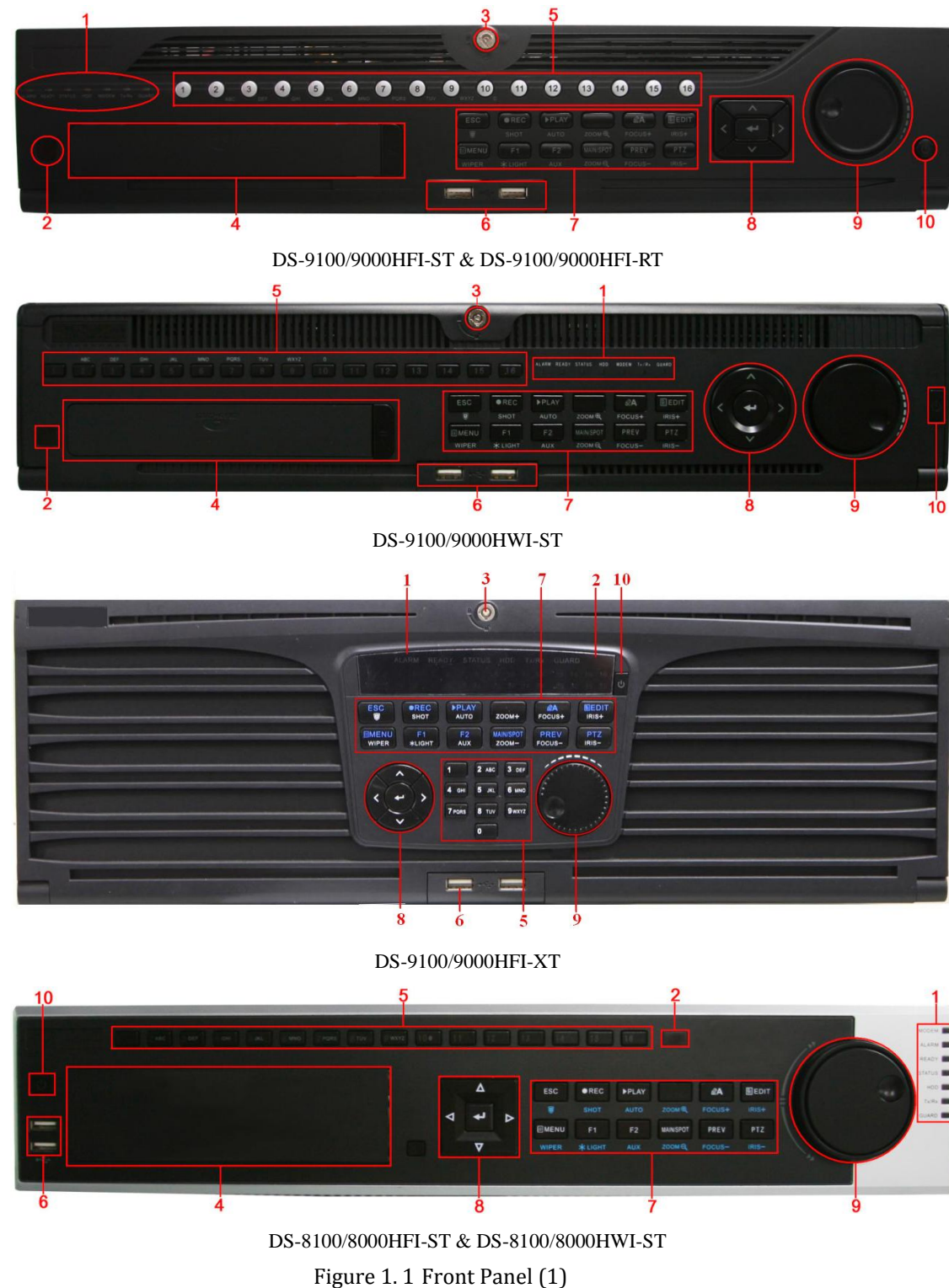


Figure 1. 1 Front Panel (1)

Table 1. 1 Description of Control Panel Buttons (1)

No.	Name	Function Description
1	ALARM	Alarm indicator turns red when a sensor alarm is detected.

	<b>READY</b>	Ready indicator is normally blue, indicating that the device is functioning properly.
	<b>STATUS</b>	Status indicator turns blue when device is controlled by an IR remote (if the device ID# is 255, the indicator is off when the device is controlled by an IR remote).
		Indicator turns red when controlled by a keyboard and purple when IR remote and keyboard is used at the same time.
	<b>HDD</b>	HDD indicator blinks red when data is being read from or written to HDD.
	<b>MODEM (Not supported by 9100/9000HFI-XT)</b>	Reserved for future usage.
	<b>TX/RX</b>	TX/RX indicator blinks blue when network connection is functioning properly.
	<b>GUARD</b>	Guard indicator turns blue when the device is in armed status; at this time, an alarm is enabled when an event is detected.
		The indicator turns off when the device is unarmed. The arm/disarm status can be changed by pressing and holding on the ESC button for more than 3 seconds in live view mode.
2	<b>IR Receiver</b>	Receiver for IR remote
3	<b>Front Panel Lock (for DS-9100/9000 series)</b>	You can lock or unlock the panel by the key.
4	<b>DVD-R/W</b>	Slot for DVD-R/W. (Optional for DS-9100/9000HFI-RT)
5	<b>Alphanumeric Buttons</b>	Switch to the corresponding channel in Live view or PTZ Control mode.
		Input numbers and characters in Edit mode.
		Switch channels in Playback mode.
		The light of the button is blue when the corresponding channel is recording; it is red when the channel is in network transmission status; it is pink when the channel is recording and transmitting.
6	<b>USB Interfaces</b>	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
7	<b>ESC</b>	Back to the previous menu.
		Press for arming/disarming the device in Live View mode.
	<b>REC/SHOT</b>	Enter the Manual Record setting menu.
		In PTZ control settings, press the button and then you can call a PTZ preset by pressing Numeric button.
		It is also used to turn audio on/off in the Playback mode.
	<b>PLAY/AUTO</b>	The button is used to enter the Playback mode.
		It is also used to auto scan in the PTZ Control menu.
	<b>ZOOM+</b>	Zoom in the PTZ camera in the PTZ Control setting.
	<b>A/FOCUS+</b>	Adjust focus in the PTZ Control menu.
		It is also used to switch input methods (upper and lowercase alphabet, symbols and numeric input).
	<b>EDIT/IRIS+</b>	Edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor.
		On checkbox fields, pressing the button will tick the checkbox.
		In PTZ Control mode, the button adjusts the iris of the camera.
		In Playback mode, it can be used to generate video clips for backup.

		Enter/exit the folder of USB device and eSATA HDD.
		Switch main and spot output.
	<b>MAIN/SPOT/ZOOM-</b>	In PTZ Control mode, it can be used to zoom out the image.
		Select all items on the list when used in a list field.
		In PTZ Control mode, it will turn on/off PTZ light (if applicable).
	<b>F1/ LIGHT</b>	In Playback mode, it is used to switch play and reverse play.
		Cycle through tab pages.
	<b>F2/ AUX</b>	In synchronous playback mode, it is used to switch channels.
		Press the button will help you return to the Main menu (after successful login).
	<b>MENU/WIPER</b>	Press and hold the button for 5 seconds will turn off audible key beep.
		In PTZ Control mode, the MENU/WIPER button will start wiper (if applicable).
		In Playback mode, it is used to show/hide the control toolbar.
	<b>PREV/FOCUS-</b>	Switch single screen and multi-screen mode.
		In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS+ button.
8	<b>PTZ/IRIS-</b>	Enter the PTZ Control mode.
		In the PTZ Control mode, it is used to adjust the iris of the PTZ camera.
	<b>DIRECTION</b>	The DIRECTION buttons are used to navigate between different fields and items in menus.
		In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files.
		In Live View mode, these buttons can be used to cycle through channels.
		In PTZ control mode, it can control the movement of the PTZ camera.
	<b>ENTER</b>	The ENTER button is used to confirm selection in any of the menu modes.
		It can also be used to <i>tick</i> checkbox fields.
		In Playback mode, it can be used to play or pause the video.
		In single-frame Playback mode, pressing the button will advance the video by a single frame.
9	<b>JOG SHUTTLE Control</b>	In Auto-switch mode, it can be used to stop /start auto switch.
		Move the active selection in a menu. It will move the selection up and down.
		In Live View mode, it can be used to cycle through different channels.
		In the Playback mode: For DS-9100/9000 series, the ring is used to jump 30s forward/backward in video files. For DS-8100/8000 series, the outer ring is used to speed up or slow down the record files and the inner ring is used to jump 30s forward/backward in records files.
10	<b>POWER ON/OFF</b>	In PTZ control mode, it can control the movement of the PTZ camera.
		Power on/off switch.

**Note:** If GUARD indicator is blue (default), all the alarm event and exception settings are valid. Otherwise, alarm event and exception settings are invalid, but normal recording is still available.

**Note:** It is important to note that you must press the EDIT button on either the remote or front panel on a text field before you're able to edit its content. After you're done entering text, you must hit the ENTER button to be able to move on to the next field.



DS-7200HWI-SV & DS-7200HFI-SV & DS-7600HI-ST

Figure 1. 2 Front Panel (2)

Table 1. 2 Description of Control Panel Buttons (2)

No.	Name	Function Description
1	<b>POWER</b>	POWER indicator turns green when DVR is powered up.
2	<b>STATUS</b>	STATUS indicator lights in red when data is being read from or written to HDD.
3	<b>Tx/Rx</b>	Tx/Rx indicator blinks green when network connection is functioning properly.
4	<b>IR Receiver</b>	Receiver for IR remote.
5	<b>USB Interface</b>	Connects USB mouse or USB flash memory devices.

## 1.2 IR Remote Control Operations

The device may also be controlled with the included IR remote control, shown in Figure 1.3.

**Note:** Batteries (2×AAA) must be installed before operation.

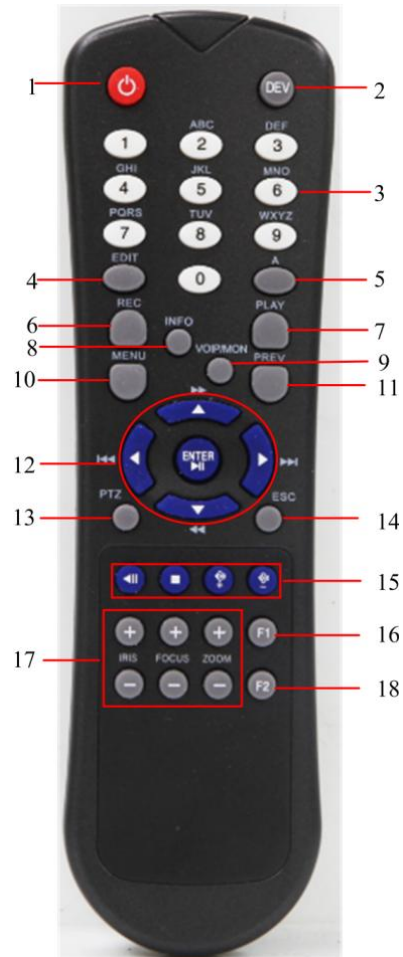


Figure 1. 3 Remote Control

The keys on the remote control closely resemble the ones on the front panel. See Table 1.3.

Table 1. 3 Description of the IR Remote Control Buttons

No.	Name	Description
1	<b>POWER</b>	Power on/off the device.
2	<b>DEV</b>	Enables/Disables Remote Control.
3	<b>Alphanumeric Buttons:</b>	Switch to the corresponding channel in Live view or PTZ Control mode.
		Input numbers and characters in Edit mode.
		Switch channels in Playback mode.
4	<b>EDIT Button</b>	Edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor.
		On checkbox fields, pressing the button will tick the checkbox.
		In PTZ Control mode, the button adjusts the iris of the camera.

		In Playback mode, it can be used to generate video clips for backup.
		Enter/exit the folder of USB device and eSATA HDD.
5	<b>A Button</b>	Adjust focus in the PTZ Control menu.
		It is also used to switch input methods (upper and lowercase alphabet, symbols and numeric input).
6	<b>REC Button</b>	Enter the Manual Record setting menu.
		In PTZ control settings, press the button and then you can call a PTZ preset by pressing Numeric button.
		It is also used to turn audio on/off in the Playback mode.
7	<b>PLAY Button</b>	The button is used to enter the Playback mode.
		It is also used to auto scan in the PTZ Control menu.
8	<b>INFO Button</b>	Reserved for future usage.
9	<b>VOIP/MON Button</b>	Switch main and spot output.
		In PTZ Control mode, it can be used to zoom out the image.
10	<b>MENU Button</b>	Press the button will help you return to the Main menu (after successful login).
		Press and hold the button for 5 seconds will turn off audible key beep.
		In PTZ Control mode, the MENU/WIPER button will start wiper (if applicable).
		In Playback mode, it is used to show/hide the control toolbar.
11	<b>PREV Button</b>	Switch single screen and multi-screen mode.
		In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS+ button.
12	<b>DIRECTION/ENTER Buttons</b>	The DIRECTION buttons are used to navigate between different fields and items in menus.
		In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files.
		In Live View mode, these buttons can be used to cycle through channels.
		In PTZ control mode, it can control the movement of the PTZ camera.
		The ENTER button is used to confirm selection in any of the menu modes.
		It can also be used to <i>tick</i> checkbox fields.
		In Playback mode, it can be used to play or pause the video.
		In single-frame Playback mode, pressing the button will advance the video by a single frame.
		In Auto-switch mode, it can be used to stop /start auto switch.
13	<b>PTZ Button</b>	Enter the PTZ Control mode.
		In the PTZ Control mode, it is used to adjust the iris of the PTZ camera.
14	<b>ESC Button</b>	Back to the previous menu.
		Press for arming/disarming the device in Live View mode.
15	<b>RESERVED</b>	Reserved for future usage.
16	<b>F1 Button</b>	Select all items on the list when used in a list field.
		In PTZ Control mode, it will turn on/off PTZ light (if applicable).
		In Playback mode, it is used to switch play and reverse play.
17	<b>PTZ Control Buttons</b>	Buttons to adjust the iris, focus and zoom of a PTZ camera.
18	<b>F2 Button</b>	Cycle through tab pages.
		In synchronous playback mode, it is used to switch channels.

### **Troubleshooting Remote Control:**

**Note:** Make sure you have installed batteries properly in the remote control. And you have to aim the remote control at the IR receiver in the front panel.

If there is no response after you press any button on the remote, follow the procedure below to troubleshoot.

#### **Steps:**

1. Go to Menu > Settings > General > More Settings by operating the front control panel or the mouse.
2. Check and remember device ID#. The default ID# is 255. This ID# is valid for all the IR remote controls.
3. Press the DEV button on the remote control.
4. Enter the device ID# in step 2.
5. Press the ENTER button on the remote.

If the Status indicator on the front panel turns blue, the remote control is operating properly. If the Status indicator does not turn blue and there is still no response from the remote, please check the following:

**Note:** When the device ID# is 255, the Status indicator is off when device is controlled by an IR remote control.

1. Batteries are installed correctly and the polarities of the batteries are not reversed.
2. Batteries are fresh and not out of charge.
3. IR receiver is not obstructed.

If the remote still can't function properly, please change a remote and try again, or contact the device provider.



## 1.3 USB Mouse Operation

A regular 3-button (Left/Right/Scroll-wheel) USB mouse can also be used with this device. To use a USB mouse:

1. Plug USB mouse into one of the USB interfaces on the front panel of the device.
2. The mouse should automatically be detected. If in a rare case that the mouse is not detected, the possible reason may be that the two devices are not compatible, please refer to the recommended device list from your provider.

The operation of the mouse:

Table 1. 4 Description of the Mouse Control

Name	Action	Description
Left-Click	Single-Click	Live view: Select channel and show the quick set menu. Menu: Select and enter.
	Double-Click	Live view: Switch single-screen and multi-screen.
	Click and Drag	PTZ control: pan, tilt and zoom. Tamper-proof, privacy mask and motion detection: Select target area. Digital zoom-in: Drag and select target area. Live view: Drag channel/time bar.
Right-Click	Single-Click	Live view: Show menu. Menu: Exit current menu to upper level menu.
Scroll-Wheel	Scrolling up	Live view: Previous screen. Right-click Menu: Previous item.
	Scrolling down	Live view: Next screen. Right-click Menu: Next item.

## 1.4 Input Method Description












Figure 1. 4 Soft Keyboard

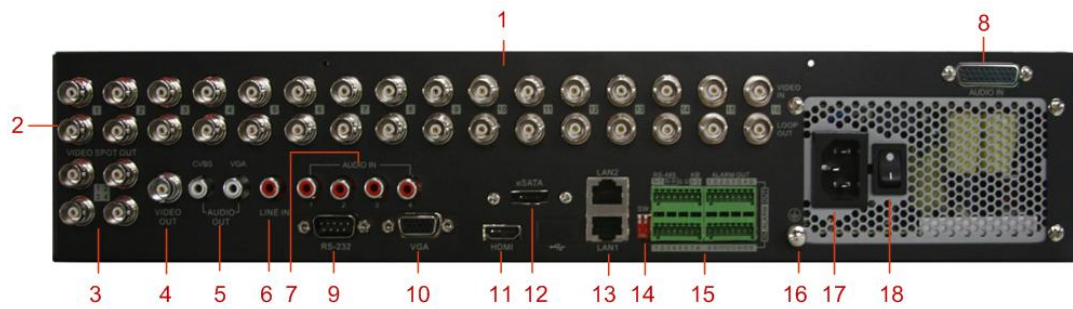
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Description of the buttons on the soft keyboard:

Table 1. 5 Description of the Soft Keyboard Icons

Icons	Description	Icons	Description
	English		Capital English
	Numbers		Symbols
	Lowercase/Uppercase		Backspace
	Space		Enter
	Exit		

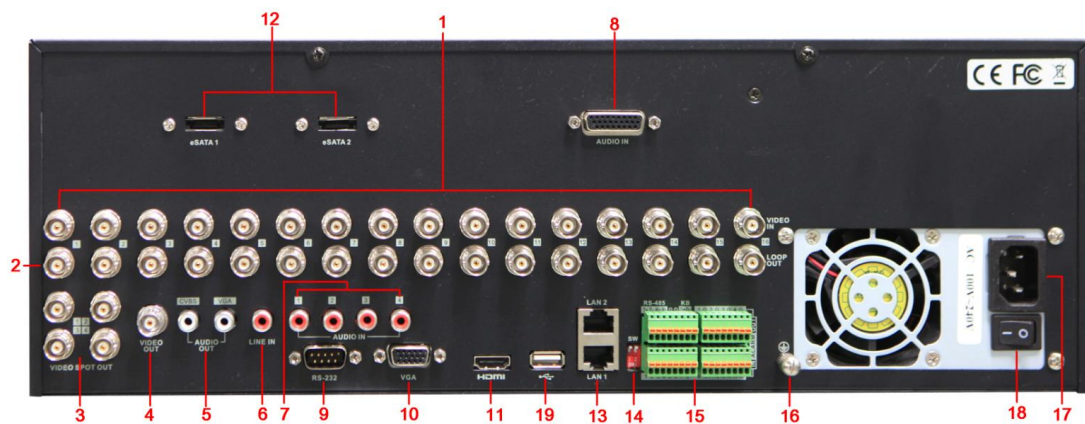
## 1.5 Rear Panel



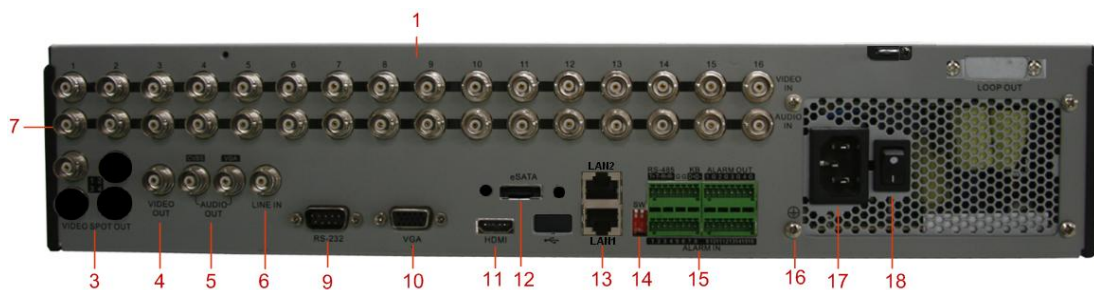
DS-9100/9000HFI-ST



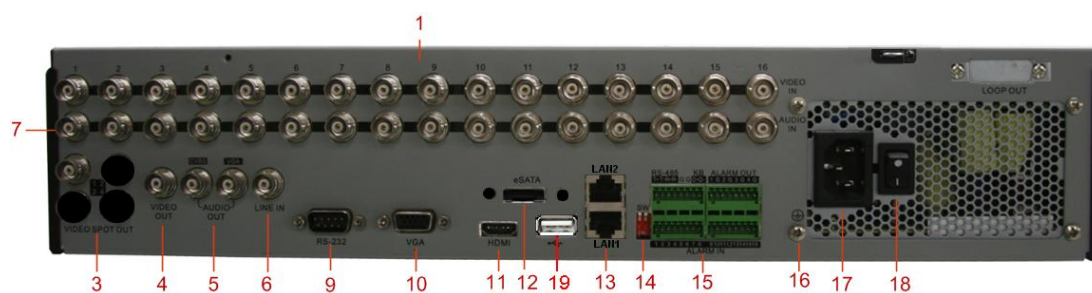
DS-9100/9000HWI-ST & DS-9100/9000HFI-RT



DS-9100/9000HFI-XT



DS-8100/8000HFI-ST



DS-8100/8000HWI-ST

Figure 1. 5 Rear Panel (1)

Table 1. 6 Description of Rear Panel (1)

No.	Item	Description
1	<b>VIDEO IN</b>	BNC connector for analog video input.
2	<b>LOOP OUT</b> (for DS-9100/9000HFI-ST/RT/XT & 9100/9000HWI-ST series)	BNC connector for video loop output.
3	<b>VIDEO SPOT OUT</b>	BNC connector for video output.
4	<b>VIDEO OUT</b>	BNC connector for video output.
5	<b>AUDIO OUT</b>	RCA (for DS-9100/9000 series) / BNC (for DS-8100/8000 series) connector for audio output. This connector is synchronized with VIDEO OUT.
6	<b>LINE IN</b>	RCA (for DS-9100/9000 series) / BNC (for DS-8100/8000 series) connector for two-way audio.
7	<b>AUDIO IN</b>	RCA (for DS-9100/9000 series) / BNC (for DS-8100/8000 series) connector for audio input.
8	<b>AUDIO IN</b> (for DS-9100/9000HFI-ST/RT/XT & 9100/9000HWI-ST series)	DB26 connector for audio input.
9	<b>RS-232 Interface</b>	Connector for RS-232 devices.
10	<b>VGA</b>	DB9 connector for VGA output. Display local video output and menu.
11	<b>HDMI</b>	HDMI video output connector.
12	<b>eSATA</b>	Connects external SATA HDD, DVD-R/W.
13	<b>LAN Interface</b>	Network interface.
14	<b>Termination Switch</b>	RS-485 termination switch. Up position is not terminated. Down position is terminated with 120Ω resistance.
15	<b>RS-485 Interface</b>	Connector for RS-485 devices. T+ and T- pin connects to R+ and R- pin of PTZ receiver respectively.
	<b>Controller Port</b>	D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first DVR's D+, D- pin should be connected with the D+, D- pin of the next DVR.
	<b>ALARM IN</b>	Connector for alarm input.
	<b>ALARM OUT</b>	Connector for alarm output.
16	<b>GROUND</b>	Ground (needs to be connected when DVR starts up).

17	<b>AC 100V ~ 240V</b>	AC 100V ~ 240V power supply.
18	<b>POWER</b>	Switch for turning on/off the device.
19	<b>USB</b>	Universal Serial Bus (USB) ports for additional devices such as USB Hard Disk Drive (HDD).



DS-7200HWI-SV &amp; DS-7200HFI-SV &amp; DS-7600HI-ST

Figure 1. 6 Rear Panel (2)

Table 1. 7 Description of Rear Panel (2)

No.	Item	Description
1	<b>VIDEO IN</b>	BNC connector for analog video input.
2	<b>VIDEO OUT</b>	BNC connector for video output.
3	<b>AUDIO IN</b>	RCA connector for audio input.
4	<b>USB Interface</b>	Connects USB mouse or USB flash memory devices.
5	<b>HDMI</b>	HDMI video output.
6	<b>VGA</b>	DB15 connector for VGA output. Display local video output and menu.
7	<b>AUDIO OUT</b>	RCA connector for audio output.
8	<b>LAN Interface</b>	Network interface.
9	<b>RS-485 Interface</b>	Connector for RS-485 devices. Connect the D+ and D- terminals to R+ and R- of PTZ receiver respectively.
10	<b>12V</b>	12 VDC power supply.
11	<b>POWER</b>	Switch for turning on/off the device.
12	<b>GND</b>	Ground (needs to be connected when DVR starts up).

## 1.6 Starting Up and Shutting Down the Device

### *Purpose:*

Proper startup and shutdown procedures are crucial to expanding the life of the device.

### *Before you start:*

Check that the voltage of the extra power supply is the same with the device's requirement, and the ground connection is working properly.

### **Starting up the device:**

#### *Steps (for 7200 & 7600 series):*

1. Check the power supply is plugged into an electrical outlet. It is **HIGHLY** recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device.
2. Press the **POWER** button on the rear panel. The Power indicator LED should turn green indicating that the device begins to start up.
3. After startup, the Power indicator LED is solid green. A splash screen with the status of the HDD appears on the monitor. The row of icons at the bottom of the screen shows the HDD status. 'X' means that the HDD is not installed or cannot be detected.

#### *Steps (for other series):*

1. Check the power supply is plugged into an electrical outlet. It is **HIGHLY** recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device.
2. Turn on the Power Switch on the rear panel and press the **POWER** button on the front panel. The Power indicator LED should turn blue indicating that the device begins to start up.
3. After startup, the Power indicator LED is solid blue. A splash screen with the status of the HDD appears on the monitor. The row of icons at the bottom of the screen shows the HDD status. 'X' means that the HDD is not installed or cannot be detected.

### **Shutting down the device:**

#### *Steps:*

There are two proper ways to shut down the device.

#### • **Task 1: Standard shutdown**

1. Enter the Shutdown menu.  
Menu > Shutdown

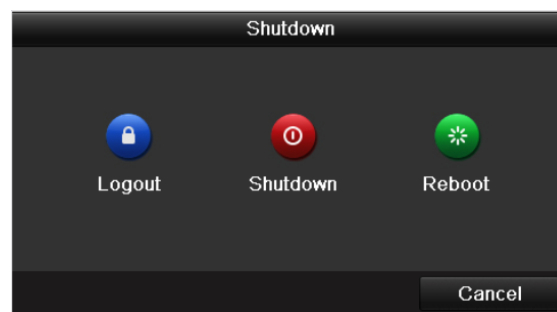


Figure 1. 7 Shutdown Menu

2. Click the **Shutdown** button.
3. Click the **Yes** button.

• **Take 2: By operating the front panel (not available for 7200 & 7600 series)**

1. Press and hold the POWER button on the front panel for 3 seconds.
2. Enter the administrator's username and password in the dialog box for authentication.
3. Click the **Yes** button.

**Notes:**

- 1) Do not press the POWER button again when the system is shutting down.
- 2) If you disable the ID Authentication in General Settings interface (Chapter 14.2), the dialog box for authentication does not pop up.

**Rebooting the device**

In the Shutdown menu (Figure 1.7), you can also reboot the device.

**Steps:**

1. Enter the **Shutdown** menu by clicking Menu > Shutdown.
2. Click the **Logout** button to logout the device or the **Reboot** button to reboot the device.

## **Chapter 2 Getting Started**



## 2.1 Using the Wizard for Basic Configuration

By default, the Setup Wizard starts once the device has loaded, as shown in Figure 2.1.

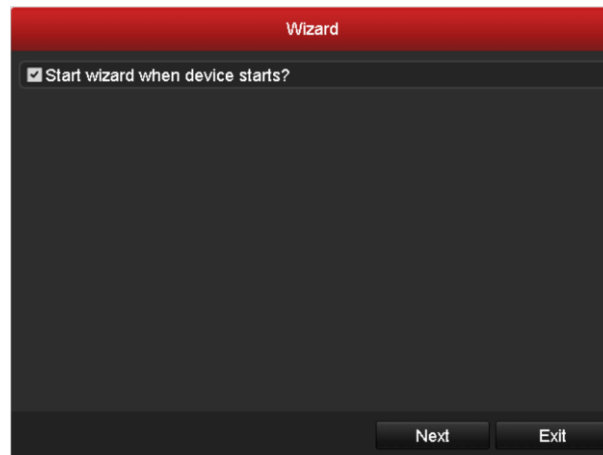


Figure 2. 1 Start Wizard Interface

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Operating the Setup Wizard:

1. The Start Wizard can walk you through some important settings of the device. If you don't want to use the Start Wizard at that moment, click **Cancel**. You can also choose to use the Start Wizard next time by leaving the "Start wizard when device starts?" checkbox checked.
2. Click **Next** on the Wizard window to enter the **Login** window, as shown in Figure 2.2.

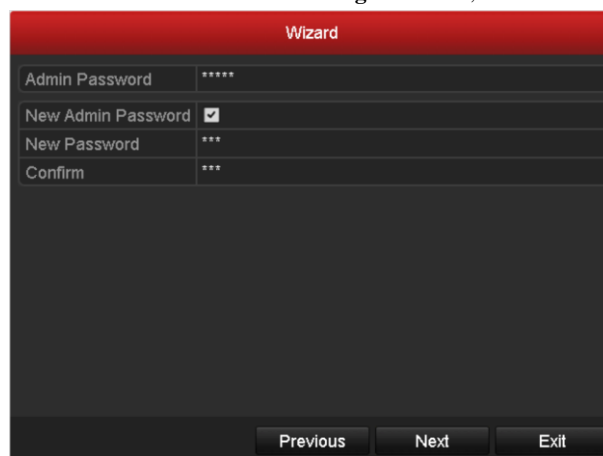


Figure 2. 2 Login Window

- 
3. Enter the admin password. By default, the password is 12345.
  4. To change the admin password, check the **New Admin Password** checkbox. Enter the new password and confirm the password in the given fields.
  5. Click **Next** to enter the date and time settings window, as shown in Figure 2.3.

Wizard	
Time Zone	(GMT+08:00) Beijing, Urumqi, Singapore
Date Format	MM-DD-YYYY
System Date	05-08-2013
System Time	15:22:59
<div>Previous    Next    Exit</div>	

Figure 2. 3 Date and Time Settings

6. After the time settings, click **Next** which takes you to the Network Start Wizard window, as shown in Figure 2.4.

**Note:** Dual NIC is not supported by DS-7200HFI(HWI)-SV & DS-7600HI-ST series.

Wizard	
Working Mode	Multi-address
Select NIC	LAN1
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 .6 .21 .110
IPv4 Subnet Mask	255 .255 .255 .0
IPv4 Default Gateway	172 .6 .21 .1
Preferred DNS Server	
Alternate DNS Server	
Default Route	LAN1
<div>Previous    Next    Exit</div>	

DS-9100/9000HFI-ST/RT/XT & DS-9100/9000HWI-ST & DS-8100/8000HFI (HWI)-ST

Wizard	
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 .6 .23 .188
IPv4 Subnet Mask	255 .255 .255 .0
IPv4 Default Gateway	172 .6 .23 .1
Preferred DNS Serv...	
Alternate DNS Server	
<div>Previous    Next    Exit</div>	

DS-7200HFI(HWI)-ST & DS-7600HI-ST

Figure 2. 4 Network Configuration

7. Click **Next** after you configured the network parameters, which takes you to the Array Management window (supported by DS-9100/9000HFI-RT series only).

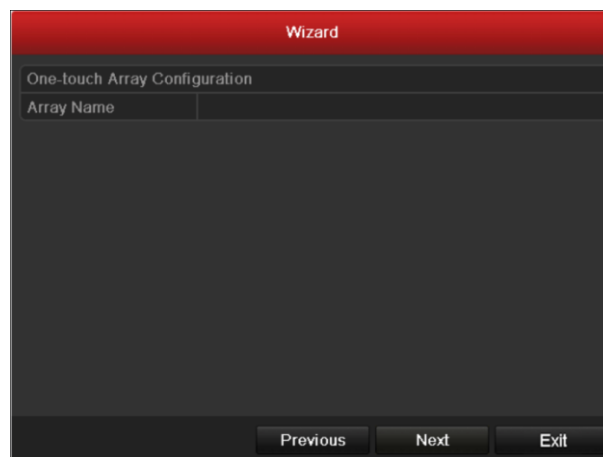


Figure 2. 5 Array Management

8. After configuring array settings, click **Next** to enter the **HDD Management** window.

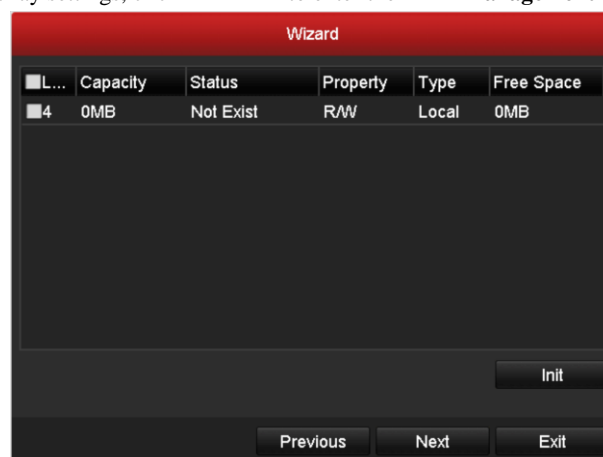


Figure 2. 6 HDD Management

9. To initialize the HDD, click **Init**. Initialization removes all the data saved in the HDD.
10. Click **Next** to enter the **IP Camera Management** window (only supported by HDVR series), as shown in Figure 2.7.

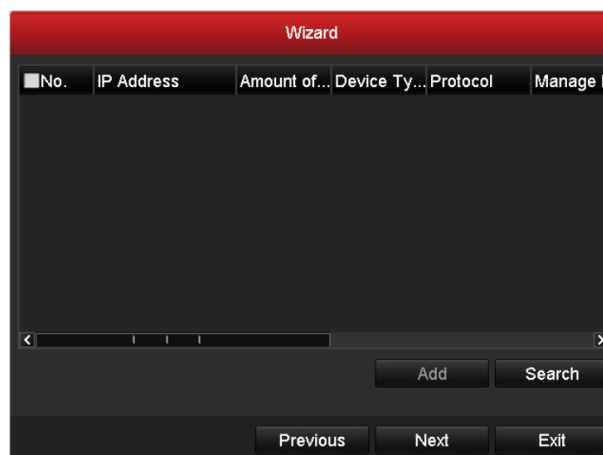


Figure 2. 7 IP Camera Management

11. Click **Search** to search IP Camera. Click **Add** to add IP Camera (only supported by HDVR series).

12. After finishing IP Camera settings, click **Next** to enter the **Record Settings** window.

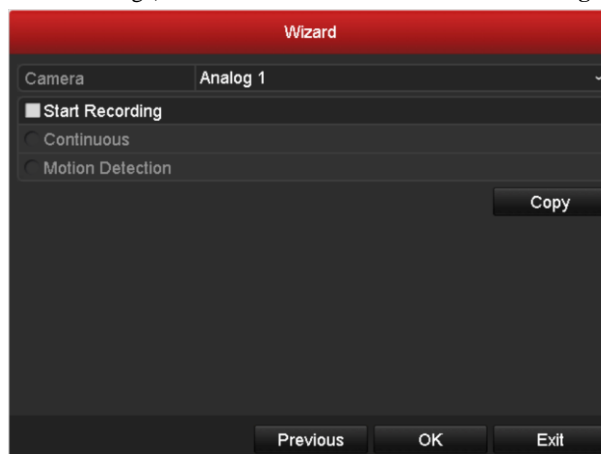


Figure 2. 8 Record Settings

13. Click **Copy** to copy the settings to other channels, as shown in Figure 2.9 and Figure 2.10.

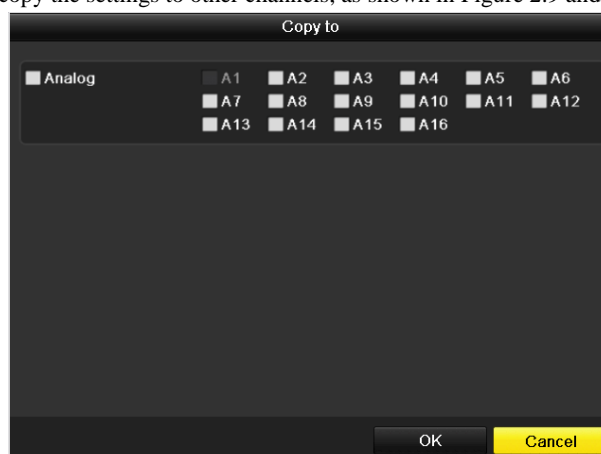


Figure 2. 9 Copy Record Settings for DVR Series



Figure 2. 10 Copy Record Settings for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

14. Click **OK** to complete the start wizard settings.

## 2.2 Adding and Connecting the IP Cameras

**Note:** This Chapter is available for HDVR series only.

### 2.2.1 Adding the IP Cameras

**Purpose:**

HDVR can connect the network cameras and record the video got from them. So before you can get a live view or record of the video, you should add the network cameras to the connection list of the device.

**Before you start:**

Ensure the network connection is valid and correct. For detailed checking and configuring of the network, please see *Chapter 9.1 Configuring General Settings*, *Chapter 9.3 Checking Network Traffic* and *Chapter 9.4 Network Detection*.

**Steps:**

1. Enter the Camera Management interface.

Main Menu> Camera> Camera

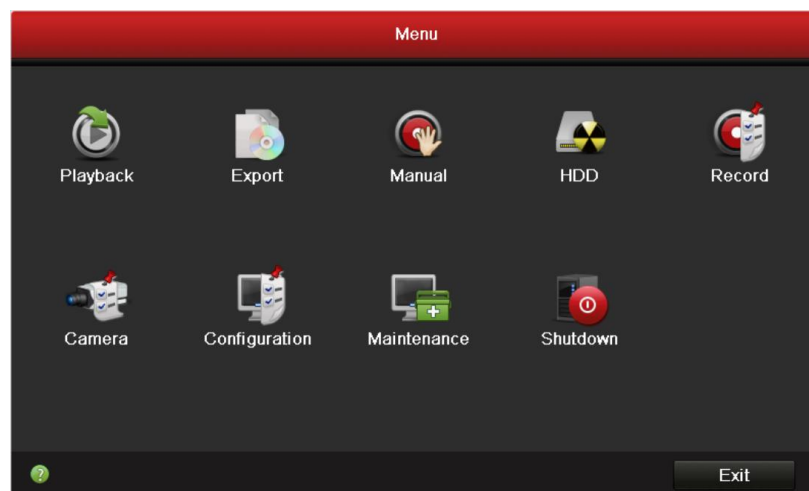


Figure 2. 11 Main Menu

**Note:** In Analog Camera Management interface, the status of analog cameras display. Disabling the analog camera can be realized by clearing the checkbox before the analog camera No.. One more network camera can be added by disabling one analog camera. 16 /8 /4 network cameras can be added to DS-9016&8016 HFI-ST&9016HFI-RT&9016HFI-XT&9016HWI-ST&7616HI-ST/9008&8008 HFI-ST&9008HFI-RT&9008HWI-ST&7608HI-ST/9004&8004HFI-ST&DS-9004HFI-RT&9004HWI-ST &7604HI-ST series at most when all the analog cameras are enabled. 32 /16 /8 network cameras can be added to DS-9016&8016 HFI-ST&9016HFI-RT&9016HFI-XT&9016HWI-ST&7616HI-ST /9008&8008 HFI-ST&9008HFI-RT&9008HWI-ST&7608HI-ST /9004&8004HFI-ST&DS-9004HFI-RT&9004HWI-ST&7604HI-ST series at most when all the analog cameras are disabled.

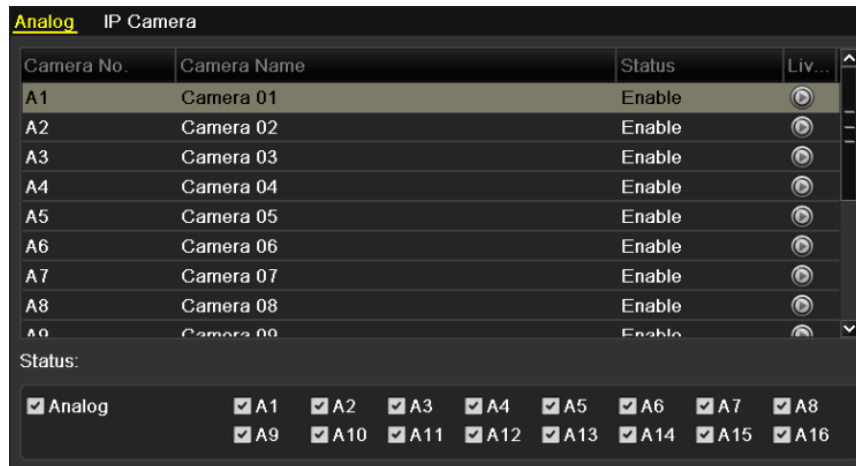


Figure 2. 12 Analog Camera Management

2. To add the online cameras with same network segment:
  - 1) Choose **IP Camera** tab and click **Search** to search the online cameras.

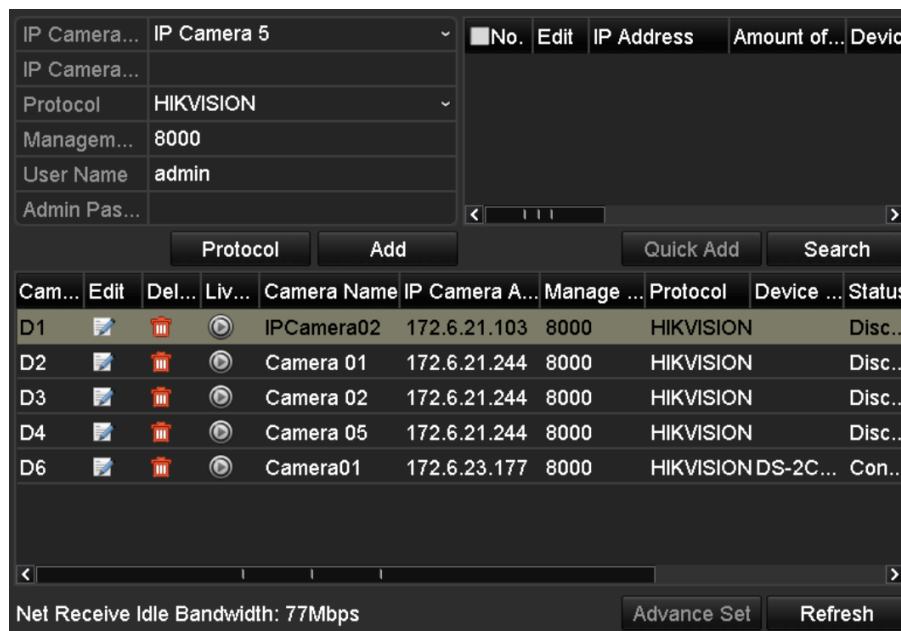


Figure 2. 13 IP Camera Management

- 2) Check the checkbox of certain cameras to be added.
  - 3) Click **Quick Add** to add the camera.
3. To add other network devices:
  - 1) On the left side of the interface, you can enter the IP address, protocol, management port, and other information of the IP camera to be added.
  - 2) Click **Add** to add the camera.
  - 3) For the encoders with multiple channels, check ☒ checkbox in the pop-up window to select the channels and click **OK** to finish adding.

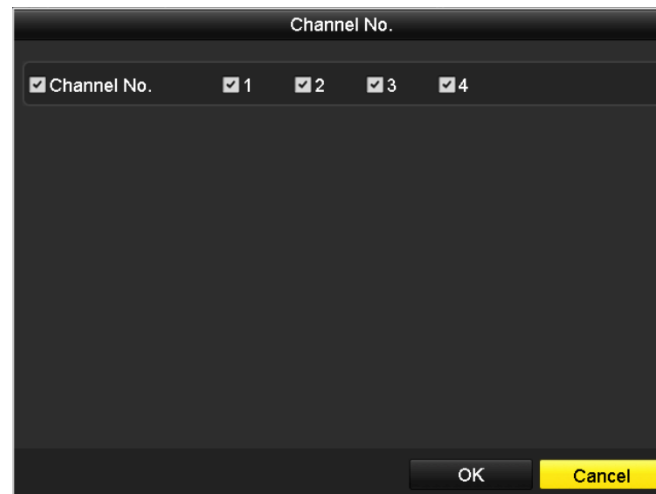


Figure 2.14 Selecting Multiple Channels


## 2.2.2 Configuring the Connected IP Cameras

### Editing the connected IP cameras

#### *Purpose:*

After the adding of the IP cameras, the basic information of the camera lists in the page, you can configure the basic setting of the IP cameras.

#### *Steps:*

1. Click  to edit the parameters; you can edit the IP address, protocol and other parameters.

A dark-themed form titled "Edit IP Camera". It contains several input fields with labels on the left and values on the right:

- IP Camera No.: D5
- IP Camera Address: 172.6.21.117
- Protocol: HIKVISION (with a dropdown arrow)
- Manage Port: 8000
- Channel No.: 1 (with a dropdown arrow)
- User Name: admin
- Admin Password: (empty field)

At the bottom of the form, there are three buttons: "Apply", "OK", and "Cancel".

Figure 2.15 Edit IP Camera

2. Click **Apply** to save the settings and click **OK** to exit the editing interface.

#### **To edit more parameters:**

1. Click **Advance Set**.

Advance Set	
Network	Password
IP Camera No.	D5
IP Camera Address	172.6.21.117
Manage Port	8000

Apply OK Cancel

Figure 2. 16 Advance Set-Network

2. You can edit the network information and the password of the camera.

Advance Set	
Network	Password
IP Camera No.	D5
Current Password	
New Password	
Confirm	

Apply OK Cancel

Figure 2. 17 Advance Set-Password

3. Click **Apply** to save the settings and click **OK** to exit the interface.

Explanation of the icons:

Edit basic parameters of the camera	Delete the IP camera	Get the live view of the camera

## Configuring the customized protocols

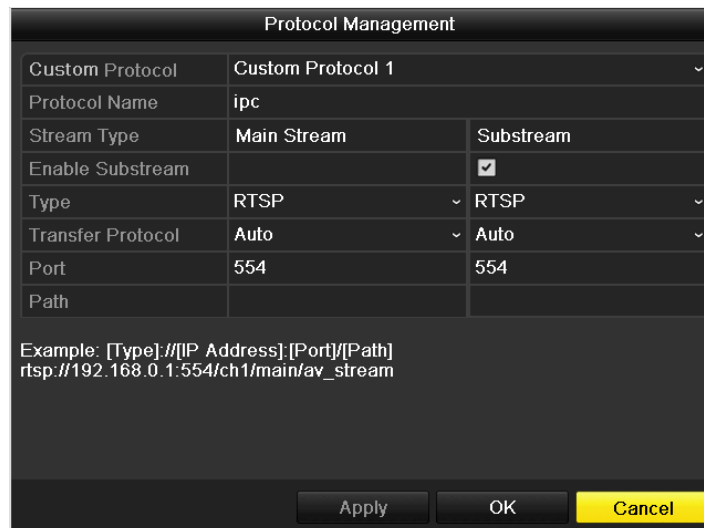
### Purpose:

To connect the network cameras which are not configured with the standard protocols, you can configure the customized protocols for them.

### Steps:

1. Click **Protocol** to enter the protocol management interface.





The screenshot shows the 'Protocol Management' window. At the top, there's a dropdown menu for 'Custom Protocol' currently set to 'Custom Protocol 1'. Below this is a table with two columns: 'Main Stream' and 'Substream'. The 'Protocol Name' is 'ipc'. 'Stream Type' is 'Main Stream'. 'Enable Substream' has a checked checkbox. 'Type' is 'RTSP', 'Transfer Protocol' is 'Auto', 'Port' is '554', and 'Path' is empty. Below the table, an example URL is provided: 'Example: [Type]://[IP Address]:[Port]/[Path]' followed by 'rtsp://192.168.0.1:554/ch1/main/av\_stream'. At the bottom are 'Apply', 'OK', and 'Cancel' buttons.

Protocol Management		
Custom Protocol	Custom Protocol 1	
Protocol Name	ipc	
Stream Type	Main Stream	Substream
Enable Substream		<input checked="" type="checkbox"/>
Type	RTSP	RTSP
Transfer Protocol	Auto	Auto
Port	554	554
Path		
Example: [Type]://[IP Address]:[Port]/[Path] rtsp://192.168.0.1:554/ch1/main/av_stream		
<div> <span>Apply</span> <span>OK</span> <span>Cancel</span> </div>		

Figure 2. 18 Protocol Management Interface

- There are 16 customized protocols provided in the system, you can select a **Custom Protocol** and configure its corresponding parameters to customize it.  
**Note:** Before customizing the protocol for the network camera, you have to contact the manufacturer of the network camera to consult the URL (uniform resource locator) for getting main stream and sub-stream.  
**Example:** The format of the URL is: [Type]://[IP Address of the network camera]:[Port]/[Path]. E.g., rtsp://192.168.1.55:554/ch1/main/av\_stream.
  - **Protocol Name:** Edit the name for the custom protocol.
  - **Enable Substream:** If the network camera does not support sub-stream or the sub-stream is not needed, leave the checkbox empty.
  - **Type:** The network camera adopting custom protocol must support getting stream through standard RTSP.
  - **Transfer Protocol:** Select the transfer protocol for the custom protocol.
  - **Port:** Set the port No. for the custom protocol.
  - **Path:** Set the resource path for the custom protocol. E.g., ch1/main/av\_stream.
- Click **Apply** to save the settings and click **OK** to finish customizing the protocol.
- After successfully adding the custom protocols, you can see the protocol name listed in the dropdown list, see the figure below.

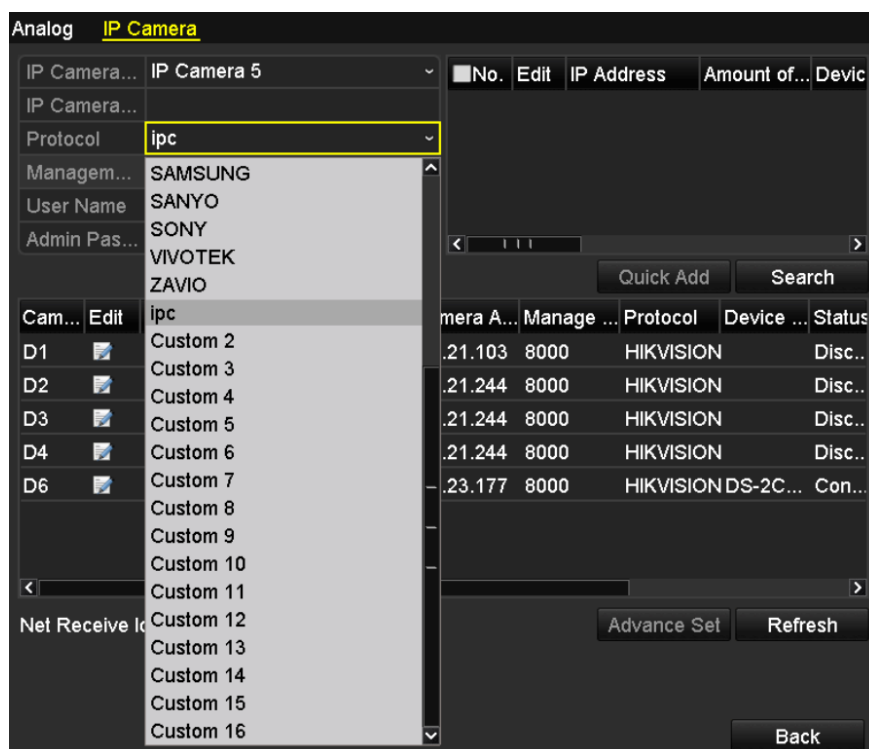


Figure 2. 19 Configure Custom Protocol

5. Select the custom protocol and enter the IP address, user name and password of the camera.
6. Click **Add** to add the network camera.

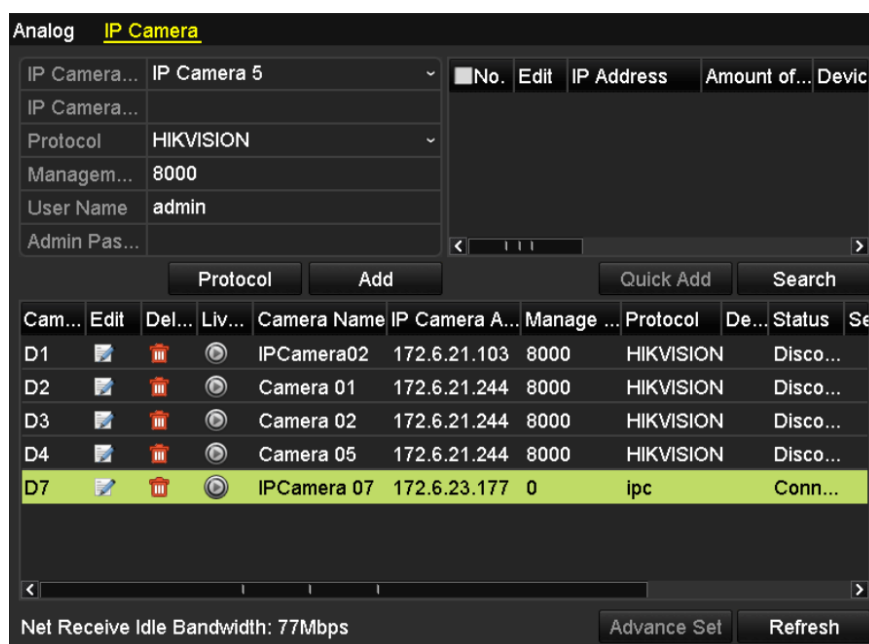


Figure 2. 20 Adding Successfully

## **Chapter 3 Live View**




## 3.1 Introduction of Live View

Live view shows you the video image getting from each camera in real time. The device automatically enters Live View mode when powered on. It is also at the very top of the menu hierarchy, thus right-clicking the mouse many times (depending on which menu you're on) brings you to the Live View mode.

### Live View Icons

In the live view mode, there are icons at the right top of the screen for each channel, showing the status of the record and alarm in the channel, so that you can know whether the channel is recorded, or whether there are alarms occur as soon as possible.

Table 3. 1 Description of Live View Icons

Icons	Description
	Alarm (video loss, tampering, motion detection or sensor alarm)
	Record (manual recording, continuous recording, motion detection or sensor alarm triggered recording)
	Alarm & Record

**Note:** Sensor alarm is not supported by DS-7200HFI/HWI-SV series.

## 3.2 Operations in Live View Mode

In live view mode, there are many functions provided. Some of the functions are listed below.

- **Single Screen:** showing only one screen on the monitor.
- **Multi-screen:** showing multiple screens on the monitor simultaneously.
- **Auto-switch:** the screen is auto switched to the next one. And you must set the dwell time for each screen on the configuration menu before enabling the auto-switch.

Menu>Configuration>Live View>Dwell Time.

- **Start Recording:** start all-day normal recording or motion detection recording for all channels.
- **Playback:** play back the recorded videos for current day.
- **Aux Monitor:** the device checks the connection of the output interfaces to define the main and auxiliary output interfaces. See the table below for the priority level of the main and aux outputs.

Table 3. 2 Priorities of Outputs for DS-9100/9000/8100/8000HWI-ST & DS-7200 & DS-7600 Series

	HDMI/VGA	CVBS	Main output	Auxiliary output
1	√	√	HDMI/VGA	CVBS
2	√	×	HDMI/VGA	
3	×	√	CVBS	

Table 3. 3 Priorities of Outputs for Other Models

	HDMI	VGA	CVBS	Main output	Auxiliary output
1	√	√	√	HDMI	VGA
2	√	×	√	HDMI	CVBS
3	×	√	√	VGA	CVBS
4	×	×	√	CVBS	

- √ means the interface is in use, × means the interface is out of use or the connection is invalid. And the HDMI, VGA and CVBS can be used at the same time.

When the aux output is enabled, the main output can't do any operation, and you can do some basic operation on the live view mode for the Aux output.

### 3.2.1 Front Panel Operation

**Note:** Front panel operation is not supported by 7200HWI-SV, 7200HFI-SV and 7600HI-ST series.

Table 3. 4 Front Panel Operation in Live View

Functions	Front Panel Operation
Show single screen	Press the corresponding Alphanumeric button. E.g. Press 2 to display only the screen for channel 2.
Show multi-screen	Press the PREV/FOCUS- button.
Manually switch	Next screen: right direction button.

screens	Previous screen: left direction button.
Auto-switch	Press <b>Enter</b> button.
Playback	Press <b>Play</b> button.
Switch main and aux output	Press <b>Main/Aux</b> button and <b>Enter</b> button.

## 3.2.2 Using the Mouse in Live View

Table 3. 5 Mouse Operation in Live View

Name	Description
Menu	Enter the main menu of the system by right clicking the mouse.
Single Screen	Switch to the single full screen by choosing channel number from the dropdown list.
Multi-screen	Adjust the screen layout by choosing from the dropdown list.
Previous Screen	Switch to the previous screen.
Next Screen	Switch to the next screen.
Start/Stop Auto-switch	Enable/disable the auto-switch of the screens.
Start Recording	Start all-day normal recording or motion detection recording for all channels.
Playback	Play back the video of the selected channel.
Output Mode	Set the video output mode to Standard, Bright, Gentle or Vivid.
Aux Monitor	Switch to the auxiliary output mode.

**Note:** The *dwelt time* of the live view configuration must be set before using **Start Auto-switch**. Refer to *Chapter 3.3* for dwell time settings.

**Note:** If you enter Aux monitor mode and the Aux monitor is not connected, the mouse operation is disabled; you need to switch back to the Main output with the **MAIN/AUX** button and **Enter** button on the front panel or remote.

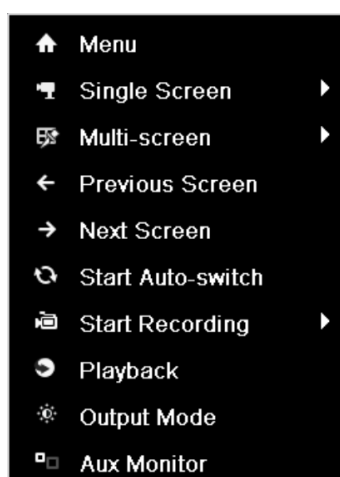


Figure 3. 1 Right-click Menu

---

### 3.2.3 Using an Auxiliary Monitor

Certain features of the Live View are also available while in an Aux monitor. These features include:

- **Single Screen:** Switch to a full screen display of the selected camera. Camera can be selected from a dropdown list.
- **Multi-screen:** Switch different display layout options. Layout options can be selected from a dropdown list.
- **Next Screen:** When displaying less than the maximum number of cameras in Live View, clicking this feature will switch to the next set of displays.
- **Playback:** Enter into Playback mode.
- **Output Mode:** Set the video output mode to Standard, Bright, Gentle or Vivid.
- **Main Monitor:** Enter Main operation mode.

**Note:** In the live view mode of the main output monitor, the menu operation is not available while Aux output mode is enabled.

### 3.2.4 Quick Setting Toolbar in Live View Mode

On the screen of each channel, there is a quick setting toolbar which shows when you right-click mouse on the camera.


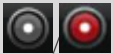








**Note:**  Live View Strategy icon is only available for network cameras.



Figure 3. 2 Quick Setting Toolbar

Table 3. 6 Description of Quick Setting Toolbar Icons

Icons	Description	Icons	Description	Icons	Description
	Enable/Disable Record		Instant Playback		Mute/Audio on
	Capture		PTZ Control		Digital Zoom
	Image Settings		Live View Strategy		Close



Instant Playback only shows the record in last five minutes. If no record is found, it means there is no record during the last five minutes.



Digital Zoom can zoom in the selected area to the full screen. You can left-click and draw to select the area for zooming in, as shown in Figure 3.3.



Figure 3.3 Digital Zoom



Image Settings icon can be selected to enter the Image Settings menu.

#### For Analog Cameras:

There are four preset modes for selection according to the real situation.

Below is the explanation for each mode.

- **Standard:** for general lighting conditions (default).
- **Indoor:** the image is relatively smoother.
- **Dim Light:** the image is smoother than the other two modes.
- **Outdoor:** the image is relatively clearer and sharper. The degree of contrast and saturation is high.

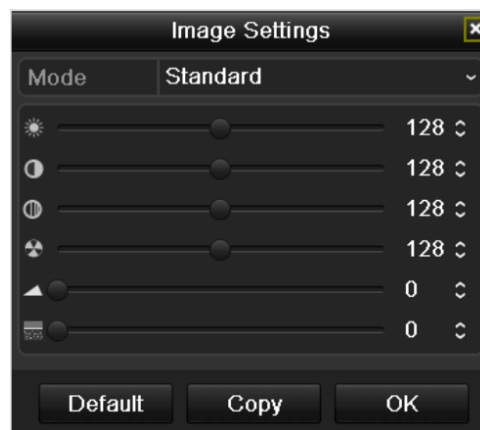


Figure 3.4 Image Settings for Analog Camera

You can adjust the image parameters, including brightness, contrast, saturation, hue, sharpness and denoising.

You can also click **Default** to restore the default settings and click **Copy** to copy the image settings to other analog channels.

#### For Network Cameras:

You can customize the brightness, contrast, saturation and hue of the network camera.



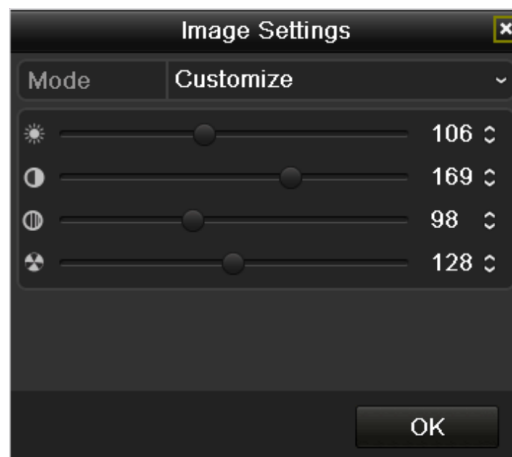


Figure 3. 5 Image Settings- Customize for Network Camera

---



Live View Strategy icon can be selected to enter the Live View Strategy menu. You can set the live view performance to real-time, balanced or fluency.

**Note:** This feature is only available for network cameras.

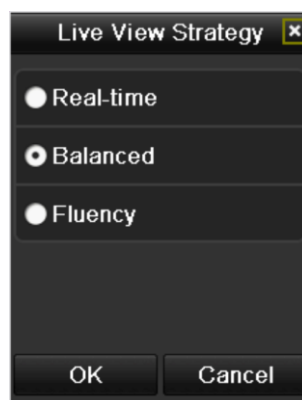


Figure 3. 6 Live View Strategy

---

## 3.3 Adjusting Live View Settings

### *Purpose:*

Live View settings can be customized according to different needs. You can configure the output interface, dwell time for screen to be shown, mute or turning on the audio, the screen number for each channel, etc.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### *Steps:*

1. Enter the Live View Settings interface.

Menu> Configuration> Live View

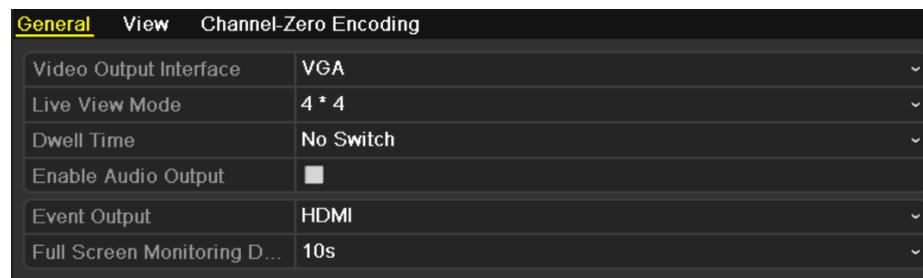


Figure 3. 7 Live View-General

---

The settings available in this menu include:

- **Video Output Interface:** Designates the output to configure the settings for. Outputs include HDMI (depends on the model), VGA, Main CVBS and Spot Output.
- **Live View Mode:** Designates the display mode to be used for Live View.
- **Dwell Time:** The time in seconds to dwell between switching of channels when enabling auto-switch in Live View.
- **Enable Audio Output:** Enables/disables audio output for the selected video output.
- **Event Output:** Designates the output to show event video.
- **Full Screen Monitoring Dwell Time:** The time in seconds to show alarm event screen.

2. Setting Camera Order



Figure 3.8 Live View- Camera Order

To set the camera order:

- 1) Select **View** tab.
- 2) Select a **Video Output Interface** and select a screen layout
- 3) Click to select a screen in the right region and double-click to select a channel in the left region.

Thus the selected channel will be displayed in the corresponding screen.

**Note:** means the channel will not be displayed.

You can also click to start live view of all channels in order and click to stop live view of all channels. Click or to go to the previous or next page.

- 4) Click **Apply** to save the setting.

## 3.4 Channel-zero Encoding

### *Purpose:*

Sometimes you need to get a remote view of many channels in real time from web browser or CMS (Client Management System) software, in order to decrease the bandwidth requirement without affecting the image quality, channel-zero encoding is supported as an option for you.

### *Steps:*

1. Enter the Live View Settings interface.  
Menu> Configuration> Live View
2. Select the **Channel-Zero Encoding** tab.

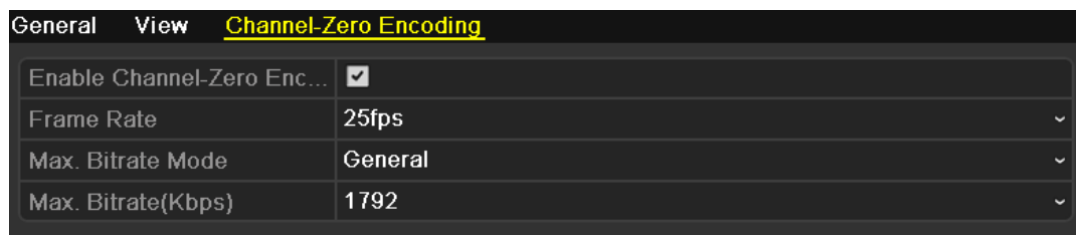


Figure 3. 9 Live View- Channel-Zero Encoding

3. Check ☒ checkbox to enable channel-zero encoding.
4. Configure the Frame Rate, Max. Bitrate Mode and Max. Bitrate.

After you set the channel-zero encoding, you can get a view in the remote client or web browser of all the channels in one screen.

## 3.5 User Logout

**Purpose:**

After logging out, the monitor turns to the live view mode and if you want to do some operation, you need to enter user name and password to log in again.

**Steps:**

1. Enter the Shutdown menu.

Menu>Shutdown

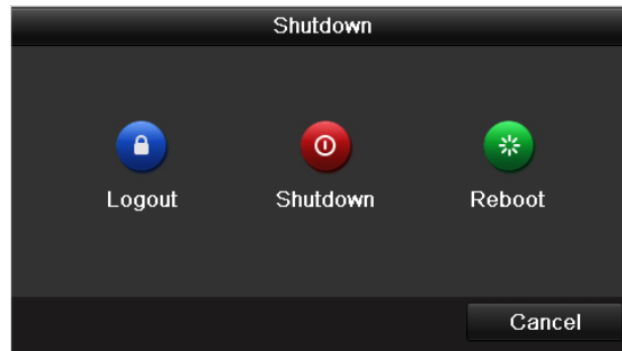


Figure 3. 10 Shutdown

2. Click **Logout**.

**Note:** After you have logged out the system, menu operation on the screen is invalid. It is required a user name and password to login the system.

## **Chapter 4 PTZ Controls**

## 4.1 Configuring PTZ Settings

### *Purpose:*

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you control the PTZ camera.

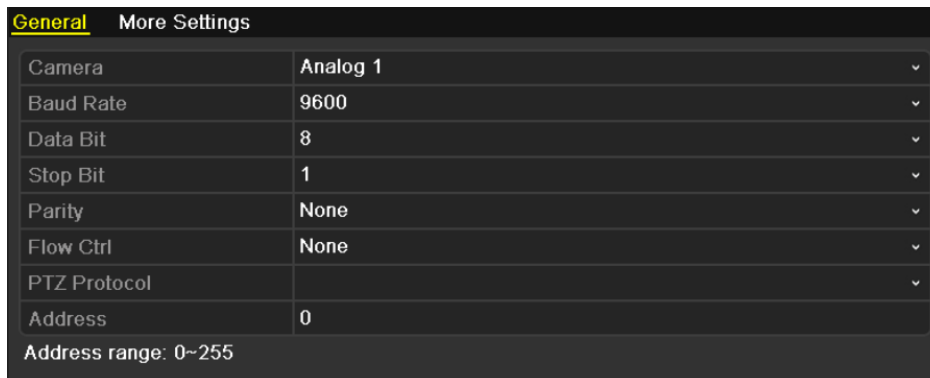
### *Before you start:*

Check that the PTZ and the device are connected properly through RS-485 interface.

### *Steps:*

1. Enter the PTZ Settings interface.

Menu >Camera> PTZ



General	More Settings
Camera	Analog 1
Baud Rate	9600
Data Bit	8
Stop Bit	1
Parity	None
Flow Ctrl	None
PTZ Protocol	
Address	0

Address range: 0~255

Figure 4. 1 PTZ- General

2. Choose the camera for PTZ setting in the **Camera** dropdown list.
3. Enter the parameters of the PTZ camera.

**Note:** All the parameters should be exactly the same as the PTZ camera parameters. Only PTZ Protocol can be configured for network cameras.

**Example:** If the PTZ camera has a Baud rate as 115200, you should input 115200 in the Baud Rate field.

4. Click **Copy** if you want to configure same settings to other analog PTZ cameras.
5. Click **Apply** to save the settings.

## 4.2 Setting PTZ Presets, Patrols & Patterns

### *Before you start:*

Please make sure that the presets, patrols and patterns should be supported by PTZ protocols.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### 4.2.1 Customizing Presets

#### *Purpose:*

Follow the steps to set the Preset location which you want the PTZ camera to point to when an event takes place.

#### *Steps:*

1. Enter the PTZ Control interface.  
Menu>Camera>PTZ>More Settings

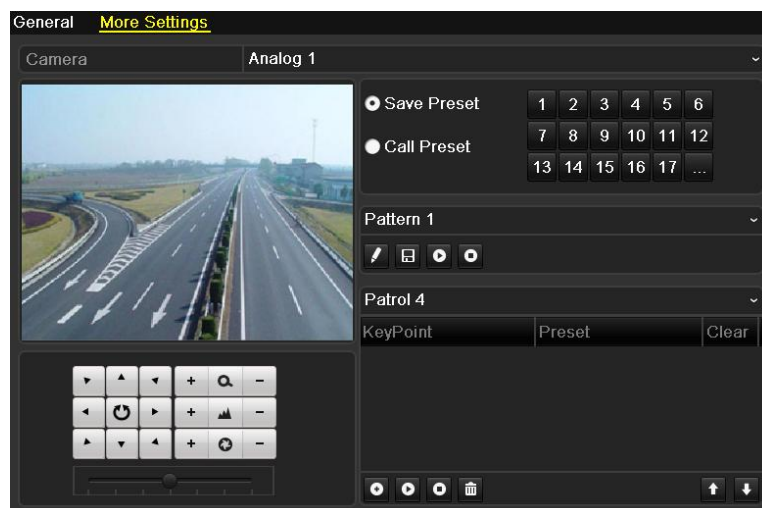


Figure 4. 2 PTZ- More Settings

2. Use the directional button to move the camera to the location where you want to set preset.
  3. Check ☒ Save Preset.
  4. Click the preset number to save the preset.
- Repeat the steps2-4 to save more presets. If the number of the presets you want to save is more than 17, you can click [...] and choose the available numbers.

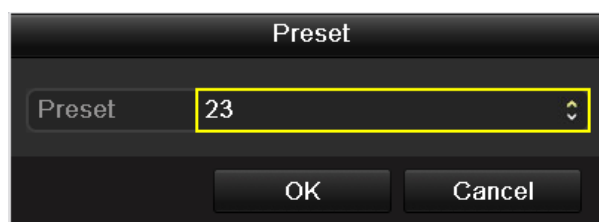


Figure 4. 3 More Presets



## 4.2.2 Calling Presets

### Purpose:

This feature enables the camera to point to a specified position such as a window when an event takes place.

### Call preset in the PTZ setting interface:

#### Steps:

1. Enter the PTZ Control interface.  
Menu>Camera>PTZ>More Settings
2. Check ☒ Call Preset

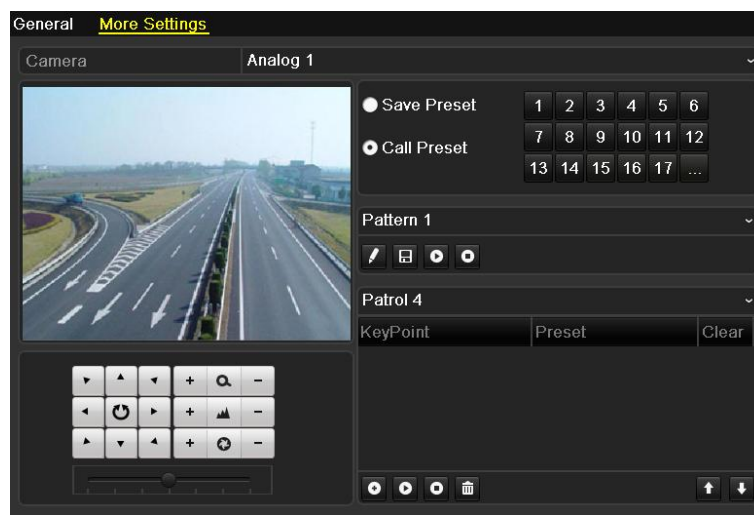


Figure 4. 4 PTZ- Call Preset

3. Choose the preset number.

### Call preset in live view mode:

#### Steps:


1. In the live view mode, press the PTZ button on the front panel or click the PTZ Control icon  in the quick setting bar to enter the PTZ setting menu in live view mode.



Figure 4. 5 PTZ Toolbar


2. Choose **Camera** in the list on the menu.
3. Double-click the preset you want to call in the **Preset** list.

## 4.2.3 Customizing Patrols

### *Purpose:*

Patrols can be set to move the PTZ to different key points and have it stay there for a set duration before moving on to the next key point. The key points are corresponding to the presets. The presets can be set following the steps above in *Chapter 4.2.1 Customizing Presets*.

### *Steps:*

1. Enter the PTZ Control interface.  
Menu>Camera>PTZ>More Settings
2. Select patrol number.
3. Click  under Patrol option box to add key points for the patrol.

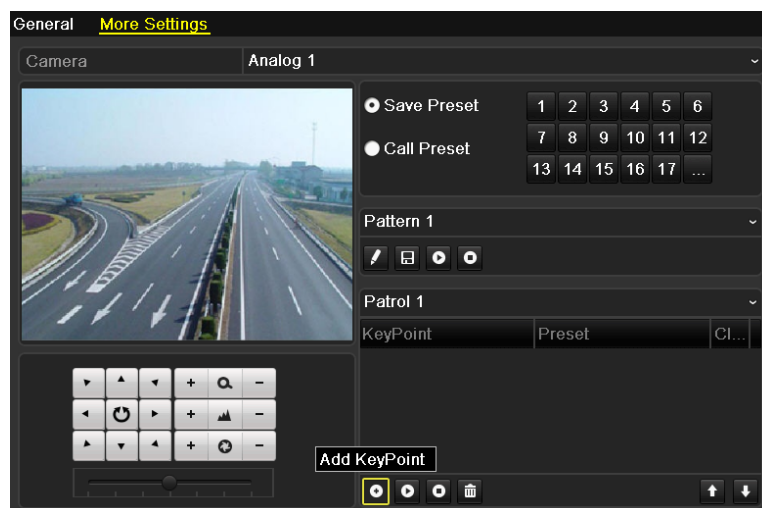


Figure 4. 6 PTZ- Add Key Point

4. Configure key point parameters, such as the preset No., duration of staying for one key point and speed of patrol. The key point is corresponding to the preset. The **Preset** determines the order at which the PTZ will follow while cycling through the patrol. The **Duration** refers to the time span to stay at the corresponding key point. The **Speed** defines the speed at which the PTZ will move from one key point to the next.

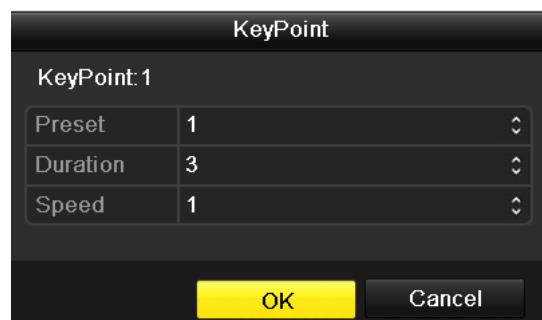




Figure 4. 7 Key point Configuration

5. Click **OK** to save the key point to the patrol.

Repeat the above steps to add more key points.

You can also click  to delete the corresponding key point and click  to delete all the key points.

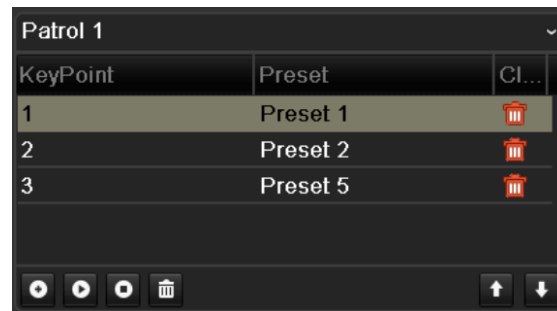


Figure 4. 8 KeyPoints Deletion



## 4.2.4 Calling Patrols

### *Purpose:*

Calling a patrol makes the PTZ to move according the predefined patrol path.

### **Calling patrol in the PTZ setting interface:**

#### *Steps:*

1. In the PTZ setting interface.  
Menu> Camera> PTZ> More Settings
2. Select the patrol number, and then click  to call the patrol.
3. Click  to stop it.

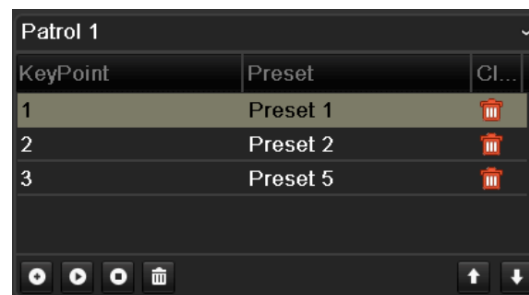


Figure 4. 9 Calling Patrol

### **Calling patrol in live view mode:**

#### *Steps:*



1. In the live view mode, press PTZ control on the front panel or on the remote, or click PTZ Control icon  on the quick setting toolbar, to show the PTZ control panel.
2. Choose **Camera** in the list on the menu.
3. Choose **Patrol** on the control bar.
4. Double-click the patrol you want to call, or click to select the patrol and click  to call the patrol.



Figure 4. 10 PTZ Panel- Patrol

## 4.2.5 Customizing Patterns

### *Purpose:*

Patterns can be set by recording the movement of the PTZ. You can call the pattern to make the PTZ movement according to the predefined path.

### *Steps:*

1. Enter the PTZ Control interface.  
Menu>Camera>PTZ>More Settings
2. Choose pattern number in the option box.

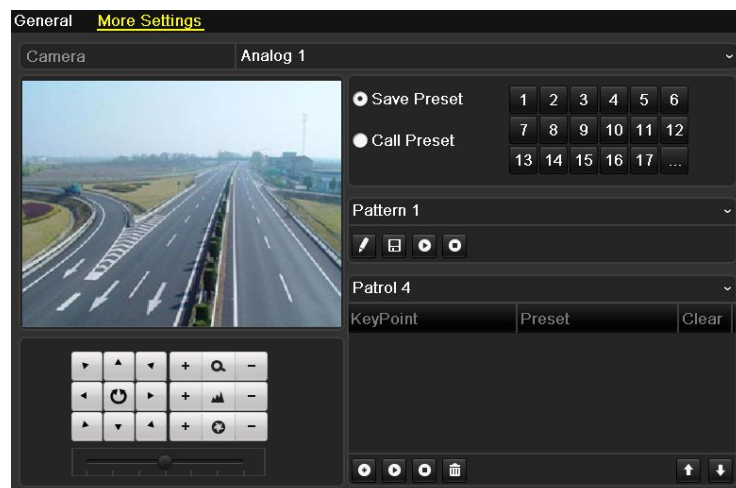




Figure 4. 11 PTZ- Pattern

3. Click , and use your mouse to drag the image or click the eight directional buttons in the control box under the image to move the PTZ camera. The movement of the PTZ is recorded as the pattern.
4. Click  to save the pattern.  
Repeat the above steps to save more patterns.



## 4.2.6 Calling Patterns

### *Purpose:*

Follow the procedure to move the PTZ camera according to the predefined patterns.

### **Calling pattern in the PTZ setting interface**

#### *Steps:*

1. Enter the PTZ Control interface.  
Menu> Camera> PTZ> More Settings
2. Select the pattern number.
3. Click , then the PTZ moves according to the pattern. Click  to stop it.

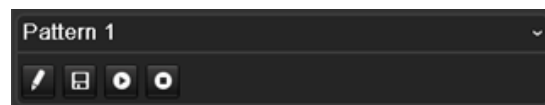


Figure 4. 12 PTZ- Calling Pattern

---

### **Call pattern in live view mode.**

#### *Steps:*



1. In the live view mode, press PTZ control on the front panel or on the remote control, or click PTZ Control icon  on the quick setting toolbar.
2. Choose **Camera** in the list on the menu.
3. And then choose **Pattern** on the control bar.
4. Double-click the pattern number you want to call, or you can select the pattern number and click  to call the pattern.



Figure 4. 13 PTZ Panel- Pattern

---

## 4.3 PTZ Control Panel

In the Live View mode, you can press the PTZ Control button on the front panel or on the remote control, or

choose the PTZ Control icon  to enter the PTZ panel.

**Note:** In PTZ control mode, the PTZ panel will display when a mouse is connected with the device. If no mouse is connected, the **PTZ** icon displays in the bottom-left corner of the live video to indicate that this camera is in PTZ control mode.

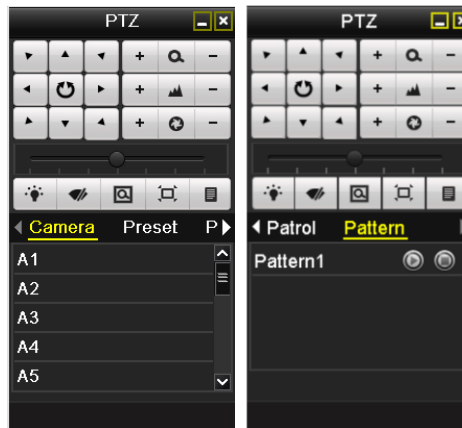




















Figure 4. 14 PTZ Panel

Table 4. 1 Description of the PTZ panel icons

Icon	Description	Icon	Description	Icon	Description
	Direction button and the auto-cycle button		Zoom+, Focus+, Iris+		Zoom-, Focus-, Iris-
	The speed of the PTZ movement		Light on/off		Wiper on/off
	3D-Zoom		Image Centralization		Preset
	Patrol		Pattern		Menu
	Previous item		Next item		Start pattern/patrol
	Stop the patrol or pattern movement		Minimize windows		Exit

## **Chapter 5 Record and Capture Settings**

**Note:** Sensor alarm is not supported by DS-7200HFI/HWI-SV series. The interface of the device are subject to the actual model.

## 5.1 Configuring Encoding Parameters

### Purpose:

By configuring the encoding parameters you can define the parameters which affect the image quality, such as transmission stream type, the resolution and so on.

### Before you start:

1. Make sure that the HDD has already been installed. If not, please install a HDD and click **Init** to initialize it. (Menu>HDD>General)

HDD Information									
<input type="checkbox"/> L...	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...	
<input checked="" type="checkbox"/> 1	931.51GB	Normal	R/W	Local	928GB	1	—	—	

Figure 5. 1 HDD- General

2. Check the storage mode of the HDD
  - 1) Click **Advanced** to check the storage mode of the HDD.
  - 2) If the HDD mode is *Quota*, please set the maximum record capacity and maximum picture capacity. For detailed information, see *Chapter 11.5 Configuring Quota Mode*.
  - 3) If the HDD mode is *Group*, you should set the HDD group. For detailed information, see *Chapter 5.8 Configuring HDD Group for Recording and Capture*.

### Steps:

1. Enter the Record settings interface to configure the encoding parameters:

Menu>Record>Parameters

Record Substream Capture		
Camera	Analog 1	
Encoding Parameters	Main Stream(Continuous)	Main Stream(Event)
Stream Type	Video & Audio	Video & Audio
Resolution	704*576(4CIF)	704*576(4CIF)
Bitrate Type	Variable	Variable
Video Quality	Medium	Medium
Frame Rate	Full Frame	Full Frame
Max. Bitrate Mode	General	General
Max. Bitrate(Kbps)	1792	1792
Max. Bitrate Range Reco...	1152~1920(Kbps)	1152~1920(Kbps)
Pre-record	5s	
Post-record	5s	
Expired Time (day)	0	
Record Audio	<input checked="" type="checkbox"/>	
Enable CABAC	<input type="checkbox"/>	

Figure 5. 2 Record Parameters



## 2. Encoding Parameters for Recording

- 1) Select **Record** tab to configure the parameters of main stream. You can configure the stream type, resolution, video quality, etc.
  - **Pre-record:** The time you set to record before the scheduled time or event. For example, when an alarm triggered the recording at 10:00, if you set the pre-record time as 5 seconds, the camera records it at 9:59:55.
  - **Post-record:** The time you set to record after the event or the scheduled time. For example, when an alarm triggered the recording ends at 11:00, if you set the post-record time as 5 seconds, it records till 11:00:05.
  - **Expired Time:** The expired time is the longest time for a record file to be kept in the HDD, if the deadline is reached, the file will be deleted. You can set the expired time to 0, and then the file will not be deleted. The actual keeping time for the file should be determined by the capacity of the HDD.
  - **Redundant Record/ Capture:** Enabling redundant record or capture means you save the record and captured picture in the redundant HDD. See *Chapter 5.7 Configuring Redundant Recording/ Capture*.
  - **Record Audio:** Enable this feature to record the sound and disable it to record the image without sound.
  - **Enable CABAC:** Enable CABAC to get high quality images with lower bitrate. This feature is only supported by analog cameras.

Pre-record	5s	▼
Post-record	5s	▼
Expired Time (day)	0	
Redundant Record/Capture	<input type="checkbox"/>	

Figure 5. 3 Record Encoding (when HDD Mode is Group)

Pre-record	5s	▼
Post-record	5s	▼
Expired Time (day)	0	

Figure 5. 4 Recording Encoding (when HDD Mode is Quota or Frame Extracting)

### Notes:

- The **Redundant Record/Capture** option is only available when the HDD mode is *Group*.
  - The redundant record/capture is to decide whether you want the camera to save the record files or captured pictures in the redundant HDD. You must configure the redundant HDD in HDD settings. For detailed information, see *Chapter 11.4.2 Setting HDD Property*.
  - For IPC, the parameters of Main Stream (Event) are not supported to modify.
  - For DS-9100/9000/8100/8000HWI-ST & DS-7200HWI-SV series, you can enable / disable the WD1 mode.
- 2) Click **Apply** to save the settings.
  - 3) You can click **Copy** to copy the settings to other analog channels, if the settings can also be used for other analog channels.

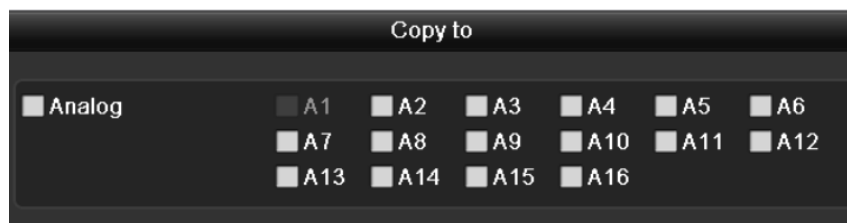


Figure 5.5 Copy Camera Settings

### 3. Encoding Parameters for Sub-stream

- 1) Select **Substream** tab to set the parameters of sub-stream. Configure the stream type, resolution, frame rate, etc.



Figure 5.6 Sub-stream Encoding

- 2) Click **Apply** to save the settings.
- 3) You can click **Copy** to copy the settings to other analog channels, if the setting can also be used for other analog channels.

### 4. Encoding Parameters for Capture

- 1) Select the **Capture** tab.

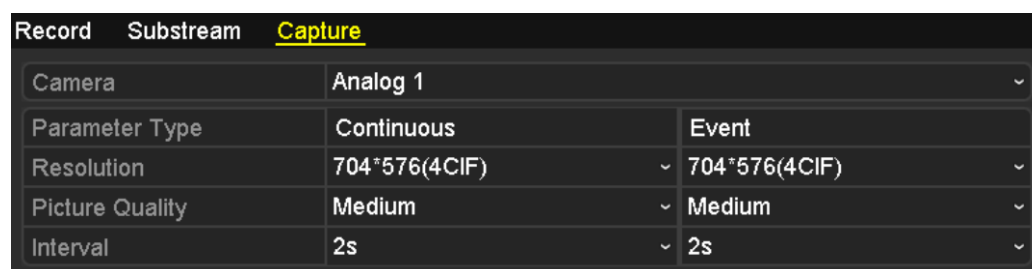


Figure 5.7 Capture Encoding

- 2) You can configure the continuous and event parameters separately.
- 3) Click **Apply** to save the settings.
- 4) If the parameters can also be used to other analog channels, click **Copy** to copy the settings to other channels.

**Note:** The interval is the time period between two capturing actions and the interval can be set as 1s, 2s, 3s, 4s, 5s, 10min, 30min, 1h, 12h and 24h. You can configure all the parameters on this menu on your demand.

5. Configure the overwrite mode of the HDD (Menu>Record>Advanced). Check ☒ checkbox to enable the

overwrite mode, and then the record files will be overwritten when the HDD becomes full. Otherwise, the recording will stop when the HDD becomes full.

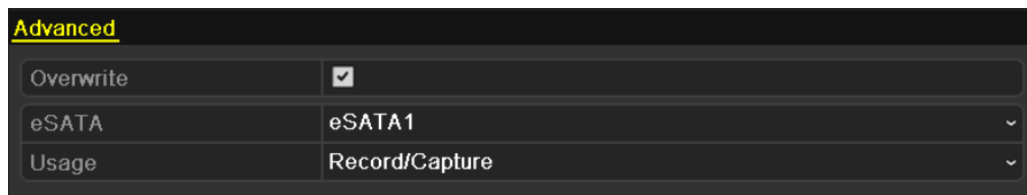


Figure 5. 8 Overwrite Mode

---

## 5.2 Configuring Record/Capture Schedule

### Purpose:

Set the record schedule, and then the camera automatically starts/stops recording according to the configured schedule.

**Note:** In this chapter, we take the record schedule procedure as an example, and the same procedure can be applied to configure schedule for both continuous recording and capture. To schedule the automatic capture, you need to choose the **Capture** tab in the **Schedule** interface. We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### Steps:

1. Enter the Record Schedule interface.  
Menu>Record>Schedule
2. Configure Record Schedule
  - 1) Select Record/Capture Schedule.

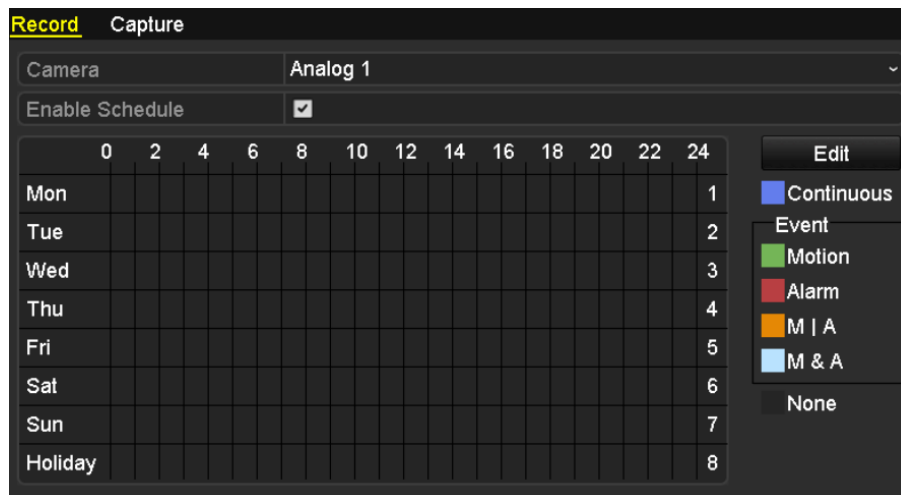


Figure 5.9 Record Schedule

- 2) Choose the camera you want to configure.
  - 3) Check ☒ checkbox to enable record schedule.
- There are two ways to configure the record schedule.

### Task 1: Edit the Schedule

#### Steps:

- 1) Click **Edit**.
- 2) In the message box, you can choose the day which you want to set schedule.
- 3) To schedule an all-day recording, check ☒ checkbox to enable all-day recording.
- 4) Set the Type in the dropdown list, including Continuous, Motion, Alarm, Motion | Alarm and Motion & Alarm.

**Note:** To enable Motion, Alarm, Motion | Alarm (motion or alarm) and Motion & Alarm (motion and alarm) triggered recording and capture, you must configure the motion detection settings or alarm input settings as well. For detailed information, refer to *Chapter 8.1* and *Chapter 8.2*.

Figure 5.10 Edit Schedule

5) To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time and Type.

**Note:** Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

Repeat the above steps2)-5) to schedule recording/capture for other days in the week. If the schedule can also be set to other days, click **Copy**.

Figure 5.11 Copy Schedule to Other Days

**Note:** The **Holiday** option is available when you enable holiday schedule in **Holiday settings**. Refer to *Chapter 5.6 Configuring Holiday Record and Capture*.

Figure 5.12 Holiday Settings

6) Click **OK** to save setting and back to upper level menu.

**Task 2: Draw the Schedule****Steps:**

- 1) Click to select a record type, including Continuous, Motion, Alarm, M | A, M & A and None.

**Note:** To enable Motion, Alarm, M | A (motion or alarm) and M & A (motion and alarm) triggered recording and capture, you must configure the motion detection settings or alarm input settings as well. For detailed information, refer to *Chapter 8.1* and *Chapter 8.2*.

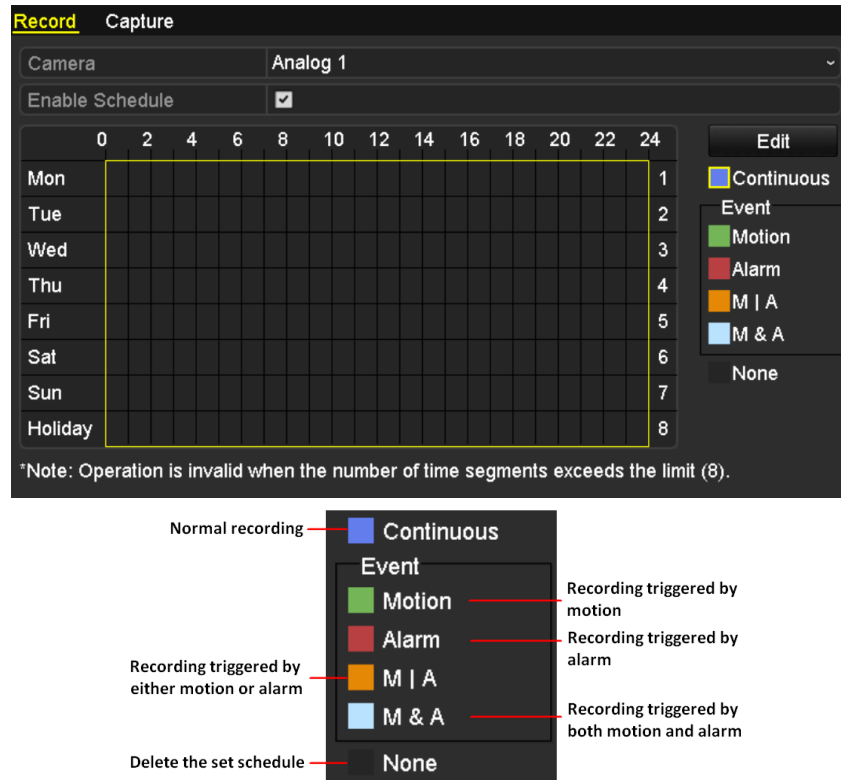


Figure 5.13 Draw the Schedule (1)

- 2) Use the mouse to drag and draw time periods.

**Note:** Up to 8 periods can be configured for each day.

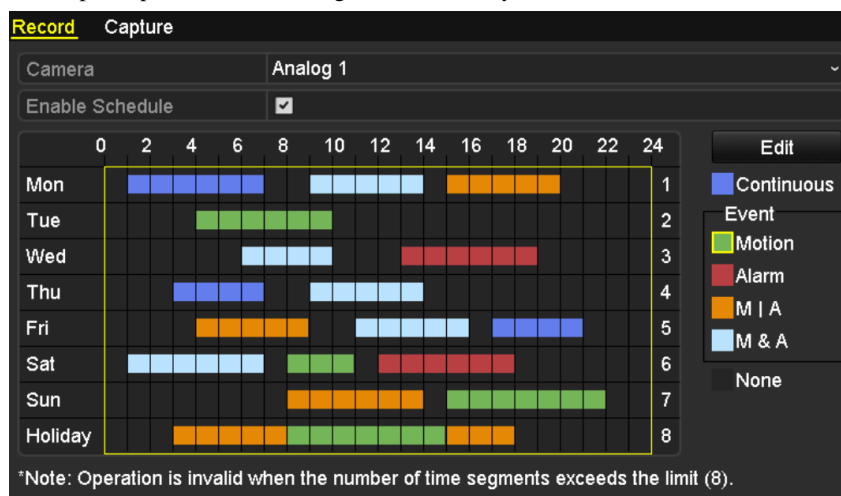


Figure 5.14 Draw the Schedule (2)

You can repeat the above steps to set schedule for other channels. If the settings can also be used to other

channels, click **Copy**, and then choose the channel to which you want to copy. Click **Apply** in the Record/Capture Schedule interface to save the settings.

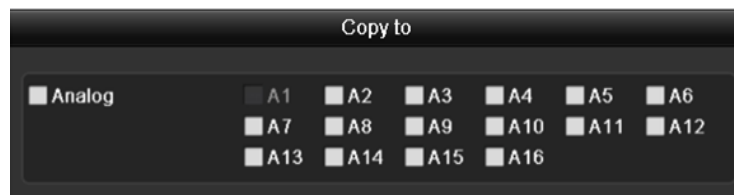


Figure 5. 15 Copy Schedule to Other Channels for DVR Series

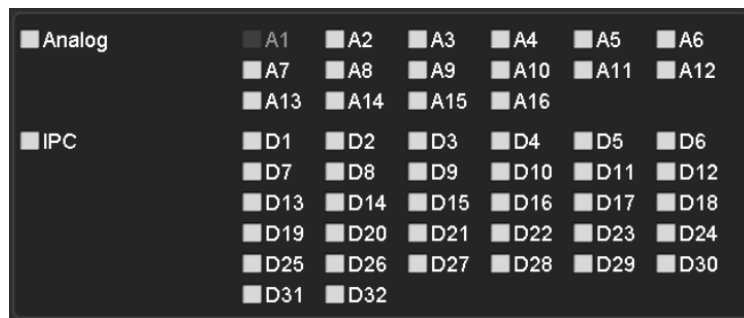


Figure 5. 16 Copy Schedule to Other Channels for HDVR Series

---

**Note:** IP Camera is supported by HDVR series only.

## 5.3 Configuring Motion Detection Recording and Capture

### *Purpose:*

Follow the steps to set the motion detection parameters. In the live view mode, once a motion detection event takes place, the device can analyze it and do many actions to handle it. Enabling motion detection function can trigger certain channels to start recording/capture, or trigger full screen monitoring, audible warning, notify the surveillance center and so on. In this chapter, you can follow the steps to schedule a record which triggered by the detected motion.

### *Steps:*

1. Enter the Motion Detection interface.

Menu>Camera>Motion

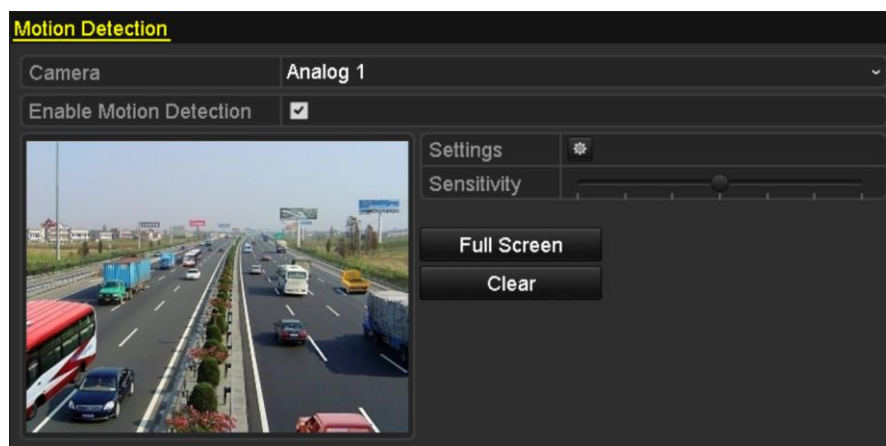


Figure 5.17 Motion Detection

2. Configure Motion Detection:

- 1) Choose camera you want to configure.
- 2) Check ☒ checkbox to enable motion detection.
- 3) Drag and draw the area for motion detection by mouse. If you want to set the motion detection for all the area shot by the camera, click **Full Screen**. To clear the motion detection area, click **Clear**.
- 4) Click to configure the motion detection settings in the pop-up message box.

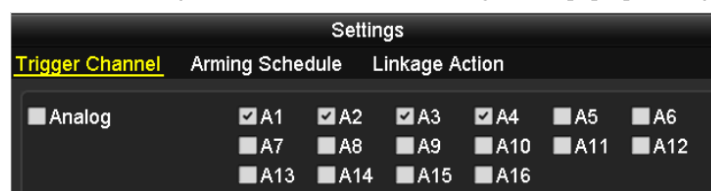


Figure 5.18 Motion Detection Settings for DVR Series



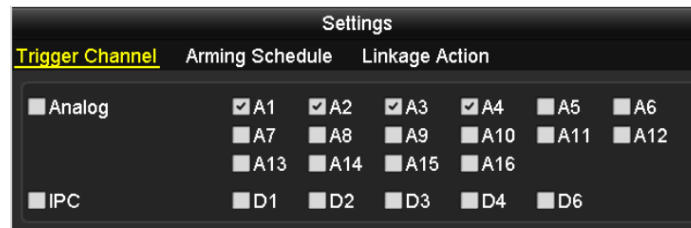


Figure 5.19 Motion Detection Settings for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

- 5) Select the channels which you want the motion detection event to trigger recording or capture.
  - 6) Click **Apply** to save the settings.
  - 7) Click **OK** to back to the upper level menu.
  - 8) Click **Apply** in the Motion Detection interface to save the settings. Exit the Motion Detection interface.
3. Enter Record/Capture Schedule settings interface (Menu> Record> Schedule>Record/Capture Schedule). For detailed information about record schedule settings, refer to step 2 in *Chapter 5.2 Configuring Record/Capture Schedule*.

**Note:** You need to select the **Type** as Motion in record schedule settings.

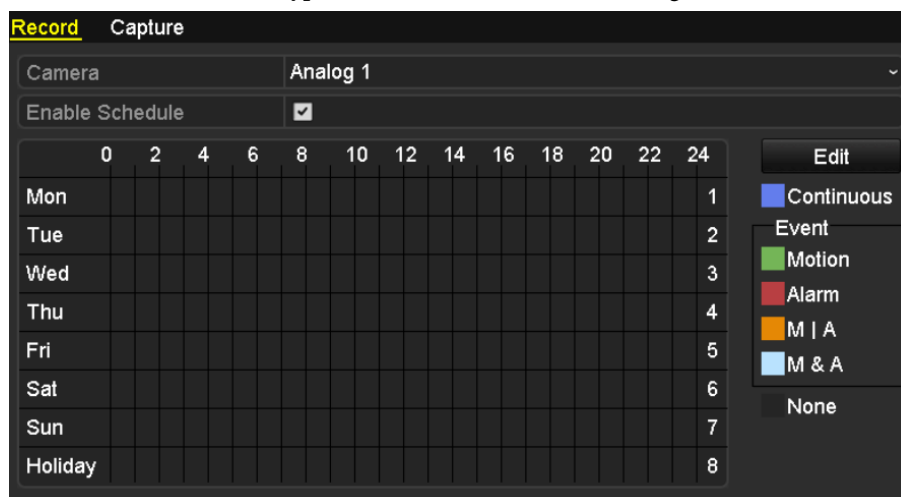


Figure 5.20 Record Schedule

## 5.4 Configuring Alarm Triggered Recording and Capture

### Purpose:

Follow the procedure to configure alarm triggered recording or capture.

**Note:** Sensor alarm is not supported by DS-7200HFI/HWI-SV series. We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### Steps:

1. Enter the Alarm setting interface.

Menu> Configuration> Alarm

Alarm Status		
Alarm Input		Alarm Output
Alarm Input List		
Alarm Input No.	Alarm Name	Alarm Type
Local-<-1	1	N.C
Local-<-2		N.O
Local-<-3		N.O
Local-<-4		N.O
Local-<-5		N.O
Local-<-6		N.O
Local-<-7		N.O
Alarm Output List		
Alarm Output No.	Alarm Name	Dwell Time
Local->1		5s
Local->2		5s
Local->3		5s
Local->4		5s

Figure 5. 21 Alarm Settings

2. Click **Alarm Input** tab.

Alarm Status	
Alarm Input	
Alarm Input No.	Local-<-1
Alarm Name	1
Type	N.C
Enable	<input checked="" type="checkbox"/>
Settings	

Figure 5. 22 Alarm Settings- Alarm Input

- 1) Select Alarm Input No. and configure alarm parameters.
- 2) Edit the alarm name as desired and choose N.O (normally open) or N.C (normally closed) for alarm type.
- 3) Check ☒ checkbox to enable the alarm input.
- 4) Click to configure the alarm settings.

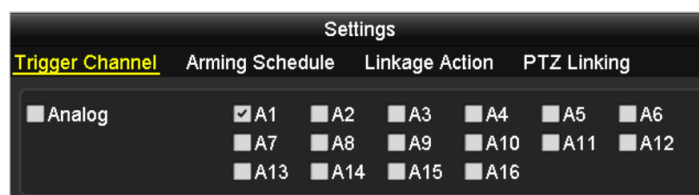


Figure 5.23 Alarm Settings for DVR Series

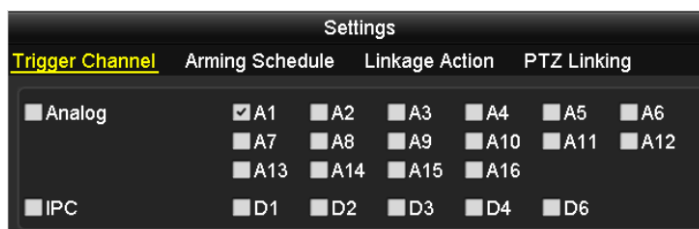


Figure 5.24 Alarm Settings for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

- 5) Check the checkbox ☒ to choose the alarm triggered recording/capture channel.
- 6) Click **Apply** to save settings.
- 7) Click **OK** to back to the upper level menu.
- 8) Click **Apply** in the Alarm Input interface to save the settings.

Repeat the above steps to configure other alarm input parameters.

If the setting can also be applied to other alarm inputs, click **Copy** and choose the alarm input number.



Figure 5.25 Copy Alarm Input

3. Enter Record/Capture Schedule settings interface (Menu> Record> Schedule>Record/Capture Schedule). For detailed information about record schedule settings, refer to step 2 in *Chapter 5.2 Configuring Record/Capture Schedule*.

**Note:** You need to select the **Type** as Alarm in record schedule settings.

**Record** Capture

Camera Analog 1

Enable Schedule ☒

	0	2	4	6	8	10	12	14	16	18	20	22	24	
Mon														1
Tue														2
Wed														3
Thu														4
Fri														5
Sat														6
Sun														7
Holiday														8

Edit

Event

- Continuous
- Motion
- Alarm
- M | A
- M & A
- None

Figure 5. 26 Record Schedule

## 5.5 Configuring Manual Recording and Continuous Capture

### Purpose:

Follow the steps to set parameters for the manual recording and continuous capture. Using manual recording and continuous capture, you need to manually cancel the record and capture. The manual recording and manual continuous capture is prior to the scheduled recording and capture.

### Steps:

1. Enter the Manual settings interface.

Menu> Manual

Or press the **REC/SHOT** button on the front panel.

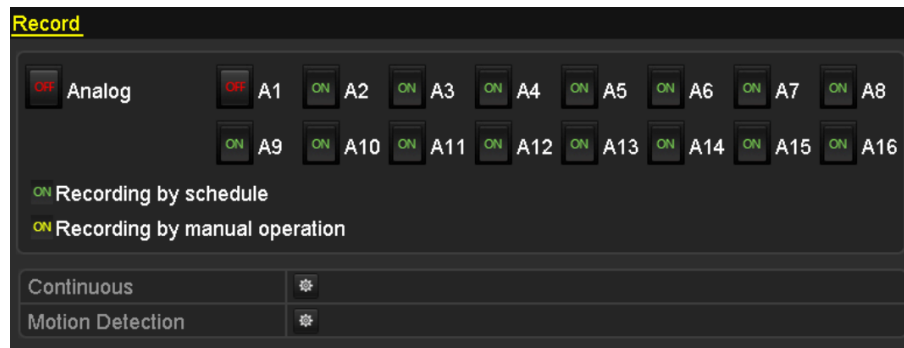


Figure 5.27 Manual Record for DVR Series

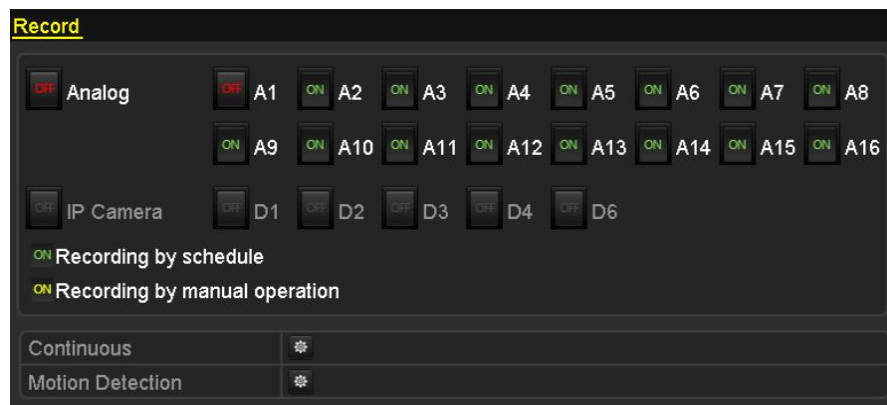


Figure 5.28 Manual Record for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

2. Enable manual record
  - 1) Select **Record** tab on the left bar.
  - 2) Click the status button before camera No. to change **OFF** to **ON**.
3. Disable manual record.  
Click the status button to change **ON** to **OFF**.

**Note:** After rebooting, all the manual records enabled will be canceled.

4. Start all-day normal recording or all-day motion detection recording of all channels.
  - 1) Click for **Continuous** or **Motion Detection**.



Figure 5.29 Continuous Recording



Figure 5.30 Motion Detection Recording

- 2) Click **Yes** to enable all-day continuous recording or all-day motion detection recording of all channels.
5. Enabling and disabling the continuous capture
  - 1) Select **Continuous Capture** tab on the left bar.

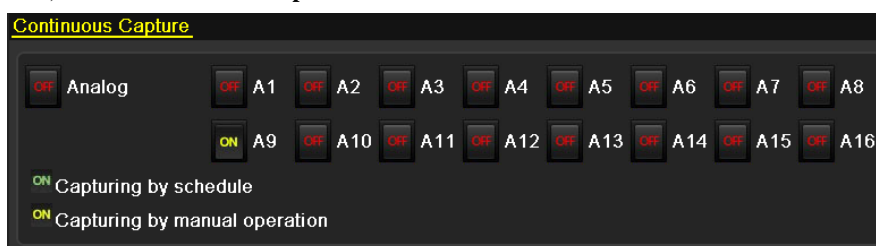


Figure 5.31 Continuous Capture for DVR Series

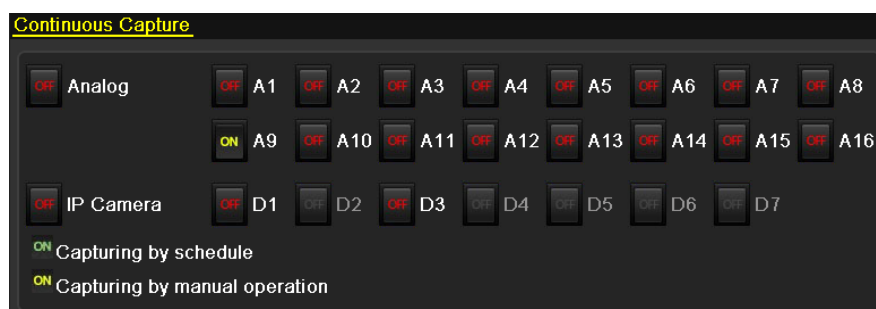


Figure 5.32 Continuous Capture for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

- 2) Click the status button before camera number to change **OFF** to **ON** to enable continuous capture.
- 3) Or click the status button to change **ON** to **OFF** to disable continuous capture.

**Note:** After rebooting, all the continuous capture will be canceled.

## 5.6 Configuring Holiday Recording and Capture

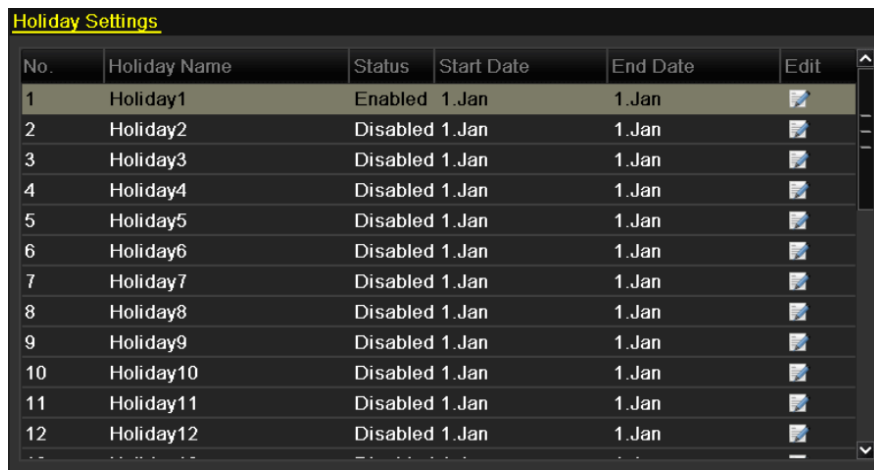
### *Purpose:*

You may want to have different plan for recording and capture on holiday. Follow the steps to configure the record or capture schedule on holiday for that year.

**Note:** The priority of holiday schedule is higher than any other schedule.

### *Steps:*

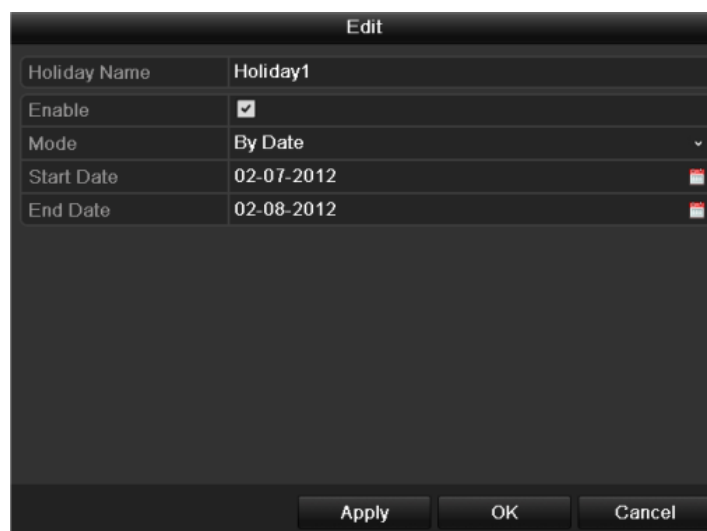
1. Enter the Record setting interface.  
Menu>Record
2. Choose **Holiday** on the left bar.



No.	Holiday Name	Status	Start Date	End Date	Edit
1	Holiday1	Enabled	1.Jan	1.Jan	
2	Holiday2	Disabled	1.Jan	1.Jan	
3	Holiday3	Disabled	1.Jan	1.Jan	
4	Holiday4	Disabled	1.Jan	1.Jan	
5	Holiday5	Disabled	1.Jan	1.Jan	
6	Holiday6	Disabled	1.Jan	1.Jan	
7	Holiday7	Disabled	1.Jan	1.Jan	
8	Holiday8	Disabled	1.Jan	1.Jan	
9	Holiday9	Disabled	1.Jan	1.Jan	
10	Holiday10	Disabled	1.Jan	1.Jan	
11	Holiday11	Disabled	1.Jan	1.Jan	
12	Holiday12	Disabled	1.Jan	1.Jan	

Figure 5. 33 Holiday Settings

3. Enable editing holiday schedule.
  - 1) Click to enter the Edit interface.



Edit	
Holiday Name	Holiday1
Enable	<input checked="" type="checkbox"/>
Mode	By Date
Start Date	02-07-2012
End Date	02-08-2012

Figure 5. 34 Edit Holiday Settings

- 2) Check ☒ checkbox to enable the holiday schedule.
  - 3) Select Mode from the dropdown list.  
There are three different modes for the date format to configure holiday schedule, including Date, Week and Month.
  - 4) Set the start and end date.
  - 5) Click **Apply** to save settings.
  - 6) Click **OK** to exit the Edit interface.
4. Enter Record/Capture Schedule settings interface (Menu> Record> Schedule>Record/Capture Schedule). For detailed information about record schedule settings, refer to step 2 in *Chapter 5.2 Configuring Record/Capture Schedule*.

**Note:** You need to select schedule type as Holiday or draw the schedule for the Holiday.

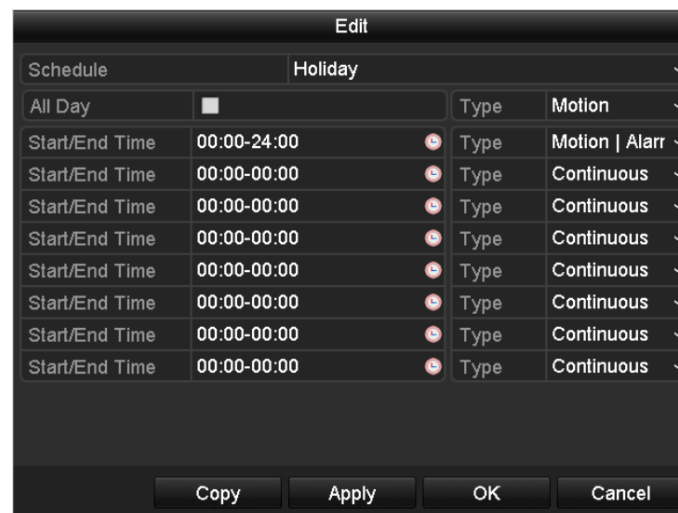


Figure 5. 35 Edit Schedule- Holiday

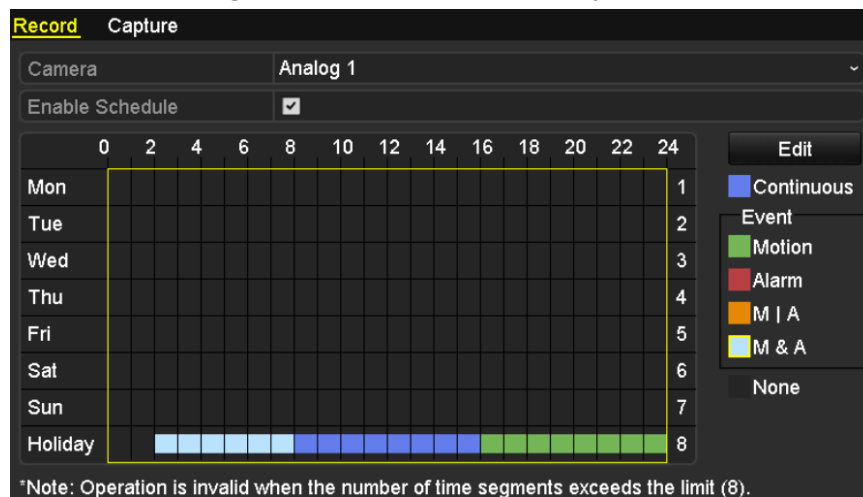


Figure 5. 36 Draw Schedule- Holiday



## 5.7 Configuring Redundant Recording and Capture

### Purpose:

Enabling redundant recording and capture, which means saving the record files and captured pictures not only in the R/W (read/write) HDD but also in the redundant HDD, will effectively enhance the data safety and reliability.

**Note:** You must set the Storage mode in the HDD advanced settings to Group before you set the HDD property to Redundant. For detailed information, please refer to *Chapter 11.4 Managing HDD Group*. There should be at least another HDD which is in R/W mode.

### Steps:

1. Enter HDD Information interface.

Menu> HDD

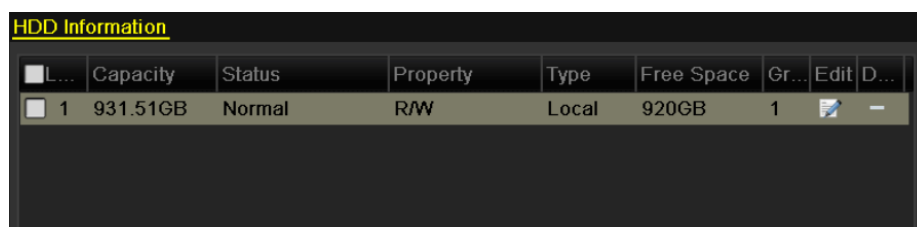



Figure 5.37 HDD General

2. Select the **HDD** and click  to enter the Local HDD Settings interface.

- 1) Set the HDD property to Redundancy.

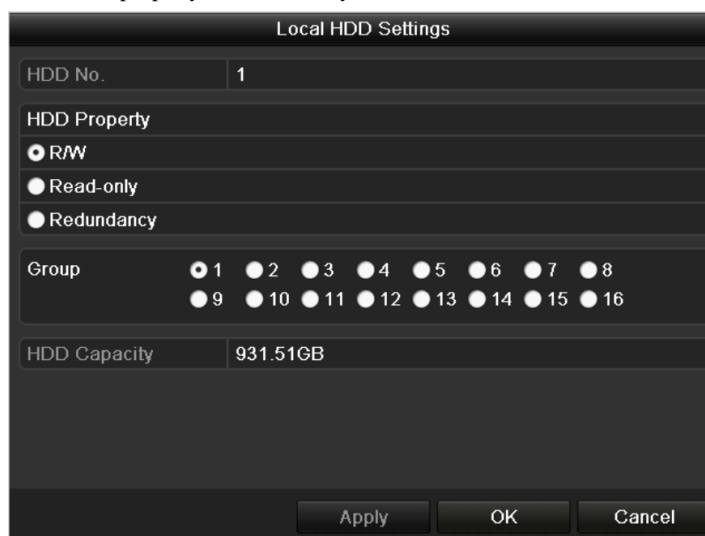


Figure 5.38 HDD General-Editing

- 2) Click **Apply** to save the settings.
  - 3) Click **OK** to back to the upper level menu.
  3. Enter the Record setting interface.
- Menu> Record> Parameters

1) Select **Record**.

<b>Record</b>	Substream	Capture
Camera	Analog 1	
Encoding Parameters	Main Stream(Continuous)	Main Stream(Event)
Stream Type	Video & Audio	Video & Audio
Resolution	704*576(4CIF)	704*576(4CIF)
Bitrate Type	Variable	Variable
Video Quality	Medium	Medium
Frame Rate	Full Frame	Full Frame
Max. Bitrate Mode	General	General
Max. Bitrate(Kbps)	1792	1792
Max. Bitrate Range Reco...	1152~1920(Kbps)	1152~1920(Kbps)
Pre-record	5s	
Post-record	5s	
Expired Time (day)	0	
Redundant Record/Capt...	<input type="checkbox"/>	
Record Audio	<input checked="" type="checkbox"/>	
Enable CABAC	<input type="checkbox"/>	

Figure 5. 39 Record Parameters

## 2) Select Camera you want to configure.

3) Check **Redundant Record/Capture** ☒ checkbox to enable redundant recording and capture.4) Click **Apply** to save settings.

Repeat the above steps2)-4) for configuring other channels. If the setting can also be applied to other analog channels, click **Copy** and then choose the channel(s).

## 5.8 Configuring HDD Group for Recording and Capture

### Purpose:

You can group the HDDs and save the record files and captured pictures in certain HDD group.

### Steps:

1. Enter HDD setting interface.

Menu>HDD

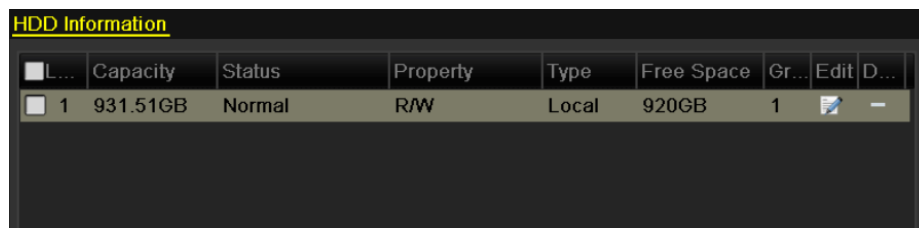


Figure 5. 40 HDD General

2. Select **Advanced** on the left bar.

Check whether the storage mode of the HDD is Group. If not, set it to Group. For detailed information, please refer to *Chapter 11.4 Managing HDD Group*.

3. Select **General** in the left bar.

Click to enter editing interface.

4. Configuring HDD group.

- 1) Choose a group number for the HDD group.
- 2) Click **Apply** and then in the pop-up message box, click **Yes** to save your settings.
- 3) Click **OK** to back to the upper level menu.

Repeat the above steps3-4 to configure more HDD groups.

5. Choose the Channels which you want to save the record files and captured pictures in the HDD group.

- 1) Select **Advanced** on the left bar.

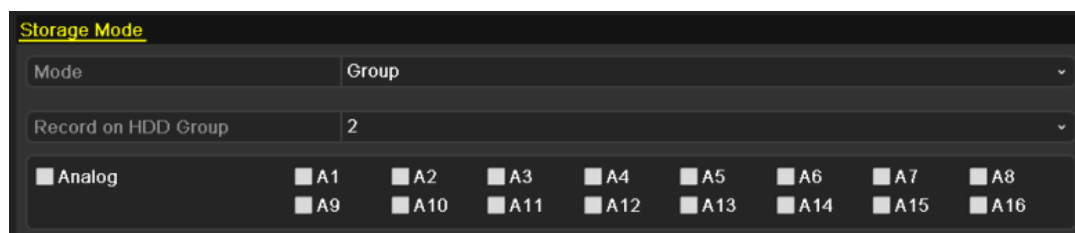


Figure 5. 41 HDD Advanced for DVR Series

**Storage Mode**

Mode	Group
Record on HDD Group	1
<input checked="" type="checkbox"/> Analog	<input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 <input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5 <input checked="" type="checkbox"/> A6 <input checked="" type="checkbox"/> A7 <input checked="" type="checkbox"/> A8 <input checked="" type="checkbox"/> A9 <input checked="" type="checkbox"/> A10 <input checked="" type="checkbox"/> A11 <input checked="" type="checkbox"/> A12 <input checked="" type="checkbox"/> A13 <input checked="" type="checkbox"/> A14 <input checked="" type="checkbox"/> A15 <input checked="" type="checkbox"/> A16
<input type="checkbox"/> IPC	<input checked="" type="checkbox"/> D1 <input checked="" type="checkbox"/> D2 <input checked="" type="checkbox"/> D3 <input type="checkbox"/> D4 <input type="checkbox"/> D5 <input type="checkbox"/> D6 <input checked="" type="checkbox"/> D7 <input checked="" type="checkbox"/> D8 <input type="checkbox"/> D9 <input type="checkbox"/> D10 <input type="checkbox"/> D11 <input type="checkbox"/> D12 <input type="checkbox"/> D13 <input type="checkbox"/> D14 <input type="checkbox"/> D15 <input type="checkbox"/> D16 <input type="checkbox"/> D17 <input type="checkbox"/> D18 <input type="checkbox"/> D19 <input type="checkbox"/> D20 <input type="checkbox"/> D21 <input type="checkbox"/> D22 <input type="checkbox"/> D23 <input type="checkbox"/> D24 <input type="checkbox"/> D25 <input type="checkbox"/> D26 <input type="checkbox"/> D27 <input type="checkbox"/> D28 <input type="checkbox"/> D29 <input type="checkbox"/> D30 <input type="checkbox"/> D31 <input type="checkbox"/> D32

Figure 5. 42 HDD Advanced for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

- 2) Choose Group number in the dropdown list of **Record on HDD Group**
- 3) Check the channels you want to save in this group.
- 4) Click **Apply** to save settings.

**Note:** After having configured the HDD groups, you can configure the Recording and Capture settings following the procedure provided in *Chapter 5.2-5.7*.

## 5.9 Files Protection

### Purpose:

You can lock the recorded files or set the HDD property to Read-only to protect the record files from being overwritten.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### Task 1: Protect file by locking the record files:

#### Steps:

1. Enter Export setting interface.  
Menu> Export

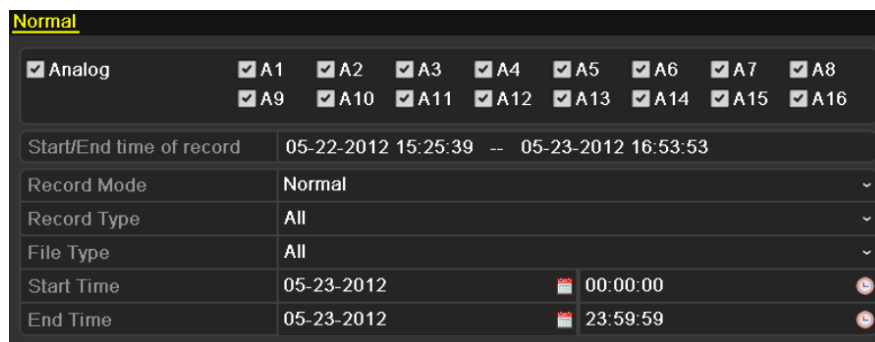


Figure 5.43 Export Interface

2. Check the checkbox to ☒ to select the channels.
3. Configure the record mode, record type, file type and start/end time.
4. Click **Search** to show the results.

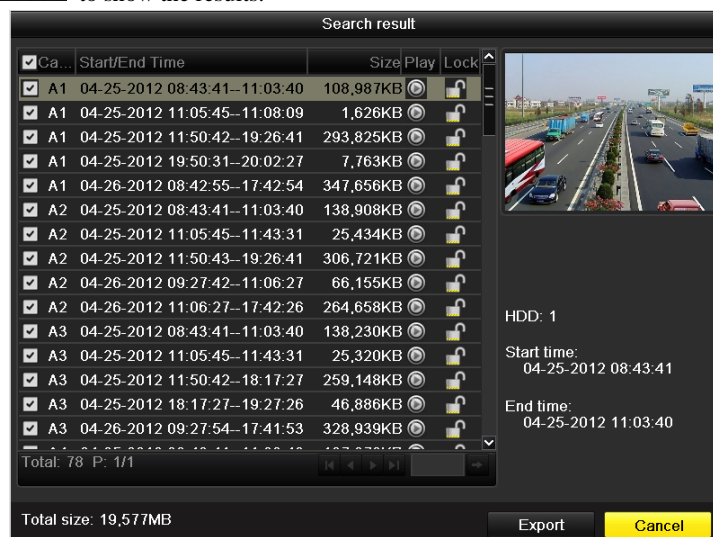




Figure 5.44 Export- Search Result

5. Protect the record files.
  - 1) Find the record files you want to protect, and then click  icon which will turn to , indicating that the file is locked.



- 2) Click  to change it to  to unlock the file and the file is not protected.



Figure 5. 45 Unlocking Attention

### Task 2: Protect file by setting HDD property to Read-only

**Note:** To edit HDD property, you need to set the storage mode of the HDD to Group. See *Chapter 11.4 Managing HDD Group*.

#### Steps:

1. Enter HDD setting interface.

Menu> HDD

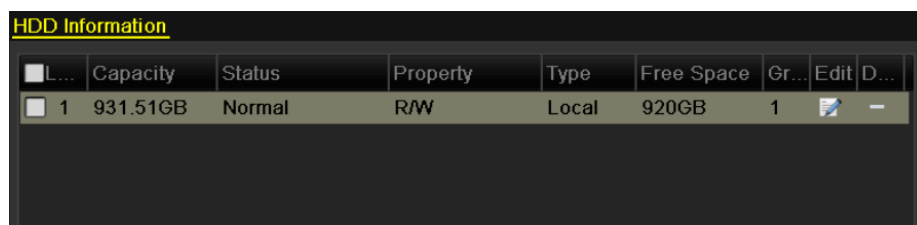


Figure 5. 46 HDD General

2. Click  to edit the HDD you want to protect.



Figure 5. 47 HDD General- Editing

3. Set the HDD to Read-only.
4. Click **OK** to save settings and back to the upper level menu.

#### Notes:

- 1) You can't save any files in a Read-only HDD. If you want to save files in the HDD, change the property to R/W.

- 2) If there is only one HDD and is set to Read-only, the device can't record any files. Only live view mode is available.
- 3) If you set the HDD to Read-only when the device is saving files in it, then the file will be saved in next R/W HDD. If there is only one HDD, the recording will be stopped.

## **Chapter 6 Playback**



## 6.1 Playing Back Record Files

### *Notes:*


1. In *Chapter 6.1*, we use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.
2. Frame extracting mode is only supported by DVR series.

### 6.1.1 Playing Back by Channel

#### *Purpose:*

Play back the recorded video files of a specific channel in the live view mode. Channel switch is supported.

#### **Instant playback by channel:**

Choose a channel in live view mode using the mouse and click the  button in the quick setting toolbar.

*Note:* Only record files recorded during the last five minutes on this channel will be played back.



Figure 6. 1 Instant Playback Interface

---

#### **Playback by channel**

##### *Steps:*

1. Enter the Playback interface.  
Mouse: Right-click a channel in live view mode and select **Playback** from the menu, as shown in Figure 6.2.

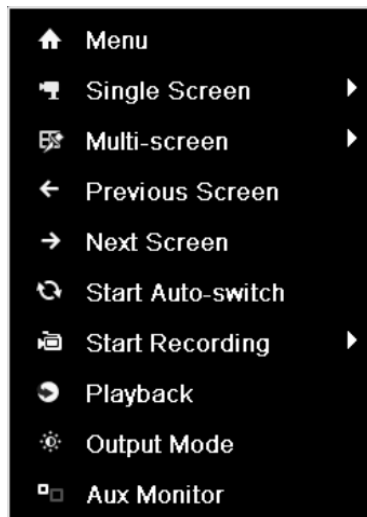


Figure 6.2 Right-click Menu under Live View

Front Panel: Press **PLAY** button to play back record files of the channel under single-screen live view mode. Under multi-screen live view mode, the recorded files of the top-left channel will be played back.

**Note:** Pressing numerical buttons will switch playback to the corresponding channels during playback process. Front panel operation is not supported by 7200HWI-SV, 7200HFI-SV and 7600HI-ST series.

## 2. Playback management.

The toolbar in the bottom part of Playback interface can be used to control playing progress, as shown in Figure 6.3.

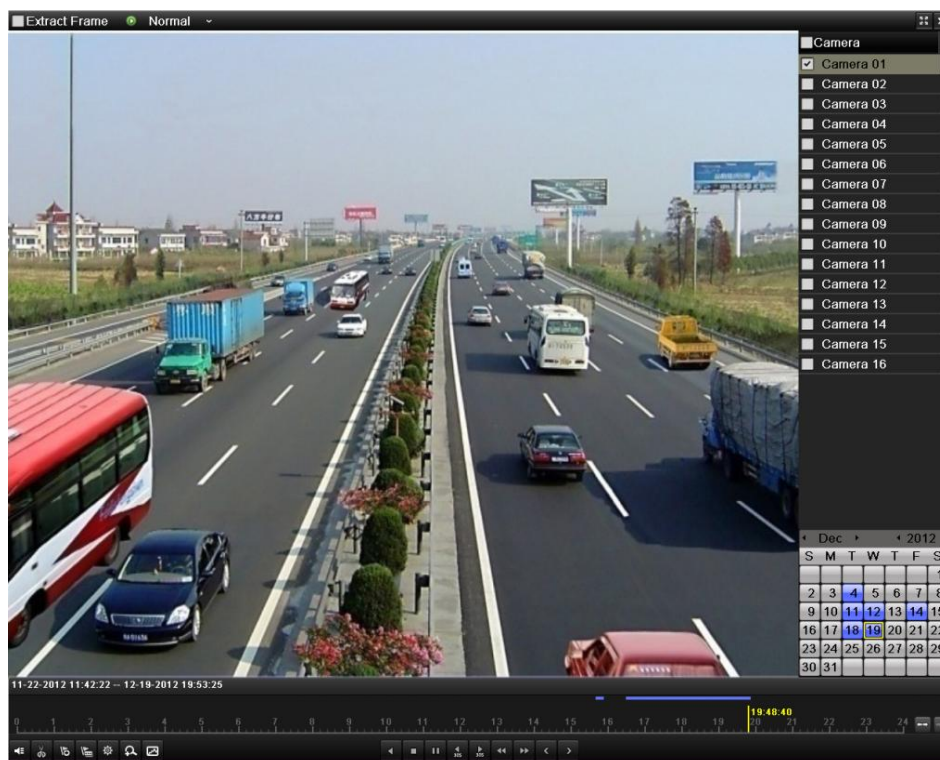


Figure 6.3 Playback Interface

Click the channel(s) if you want to execute synchronous playback of multiple channels.



Figure 6. 4 Toolbar of Playback

**Note:** The **11-22-2012 11:42:22 -- 12-19-2012 19:53:25** indicates the start/end time of the record.

Table 6. 1 Detailed Explanation of Playback Interface

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on /Mute		Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Digital Zoom		Smart Search		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Stop		30s forward		30s reverse
	Slow forward		Fast forward		Previous day		Next day
	Scaling up/down time bar		Process bar		Full Screen		Exit
	Frame extracting mode		Video type / picture				

**Notes:**

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.
2. Frame extracting mode is supported by DVR series only.

## 6.1.2 Playing Back by Time

**Purpose:**

Play back video files recorded in specified time duration. Multi-channel simultaneous playback and channel switch are supported.

**Steps:**

1. Enter Playback interface.  
Menu>Playback
2. Check ☒ checkbox of channel(s) in the channel list.
3. Double-click to select a date on the calendar to play back the record file.



**Note:** If there are record files for that camera in that day, in the calendar, the icon for that day is displayed as . Otherwise it is displayed as .



Figure 6.5 Playback Calendar

In the Playback interface:

The toolbar in the bottom part of Playback interface can be used to control playing process, as shown in Figure 6.6.







Figure 6.6 Interface of Playback by Time





















Figure 6.7 Toolbar of Playback by Time

**Note:** The 11-22-2012 11:42:22 -- 12-19-2012 19:53:25 indicates the start/end time of the record.

Table 6.2 Detailed Explanation of Playback-by-time Interface

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on /Mute		Start/Stop clipping		Add default tag		Add customized tag

	Tag management		Digital Zoom		Smart Search		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Stop		30s forward		30s reverse
	Slow forward		Fast forward		Previous day		Next day
	Scaling up/down time bar		Process bar		Full Screen		Exit
	Frame extracting mode		Video type / picture				

**Notes:**



1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.
2. Frame extracting mode is supported by DVR series only.

### 6.1.3 Playing Back by Event Search

**Purpose:**

Play back record files on one or several channels searched out by restricting event type (e.g. alarm input and motion detection).

**Steps:**

1. Enter the playback interface.  
Menu>Playback
2. Click  and select  to enter the Event Playback interface.
3. Select **Alarm Input** as the event type, and edit the Start time and End time.

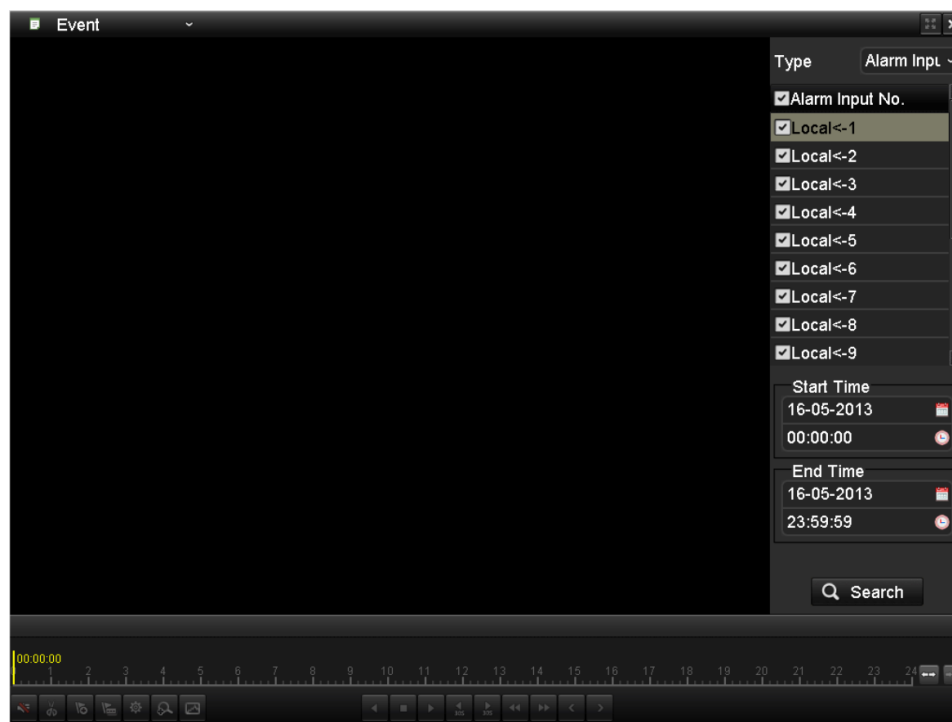


Figure 6. 8 Event Playback Interface-Alarm Input

- Click **Search** to get the search result information listed in the right-side panel.

Source	Start Time	Play
Local<-1	19:23:22	

Figure 6. 9 Result of Video Search by Alarm Input

If you want to play back recorded files associated with motion detection, choose **Motion** as event type, edit the Start time and End time and click **Search** to search the related record file(s).

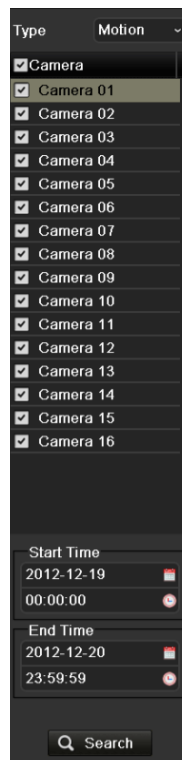




Figure 6. 10 Video Search by Motion


5. Click  button to play back the record files.



You can click  Back to return to the search interface.

**Note:** Pre-play and post-play can be configured for the alarm input triggered record files.

**Pre-play:** The time you set to play back before the event. For example, when an alarm triggered the recording at 10:00, if you set the pre-play time as 5 seconds, the video plays back from 9:59:55.

**Post-play:** The time you set to play back after the event. For example, when an alarm triggered the recording ends at 11:00, if you set the post-play time as 5 seconds, the video plays back till 11:00:05.

If there is only one channel is triggered by an alarm input, clicking  button takes you to Full-screen Playback interface of this channel.

If several channels are triggered, clicking  button takes you to the interface as shown in Figure 6.11. Check  checkbox to select one channel for playback or select multiple channels for synchronous playback.

**Note:** For DVR series, 4-ch, 8-ch and 16-ch devices support 4-ch, 8-ch and 16-ch synchronous playback respectively. While for HDVR series, 4-ch, 8-ch, 16-ch devices support 8-ch, 16-ch and 16-ch synchronous playback respectively.



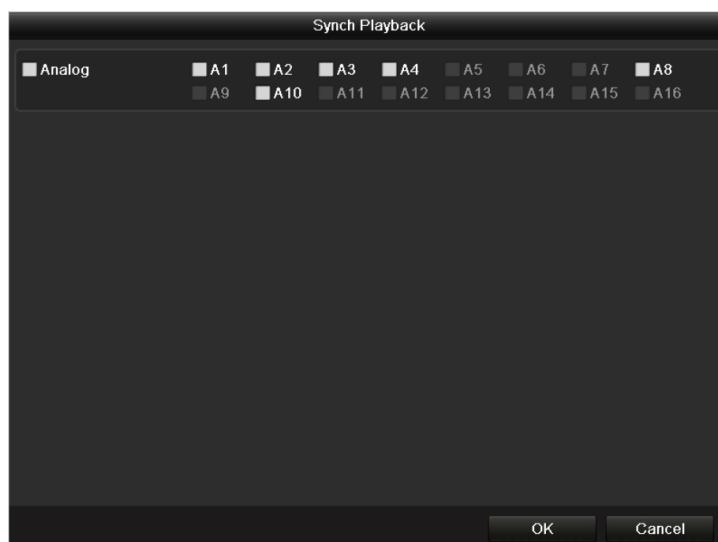


Figure 6.11 Select Channels for Synchronous Playback

## 6. Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.



Figure 6.12 Interface of Playback by Event

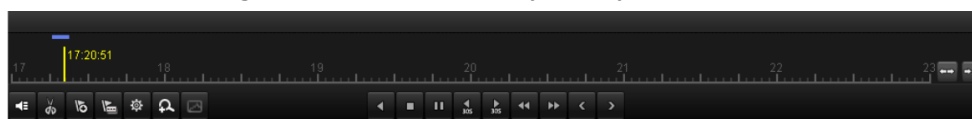
















Figure 6.13 Toolbar of Playback by Event

Table 6.3 Detailed Explanation of Playback-by-event Interface

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on /Mute		Start/Stop clipping		Add default tag		Add customized tag
	Tag		Digital		Smart		Pause reverse



	management		Zoom		Search		play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Stop		30s forward		30s reverse
	Slow forward		Fast forward		Previous day		Next day
	Scaling up/down time bar		Process bar		Full Screen		Exit
	Frame extracting mode		Video type / picture				

**Notes:**

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.
2. Frame extracting mode is supported by DVR series only.

## 6.1.4 Playing Back by Tag

**Purpose:**


Video tag allows you to record related information like people and location of a certain time point during playback. You are also allowed to use video tag(s) to search for record files and position time point.


**Before playing back by tag:**

1. Enter Playback (Menu>Playback) interface.
2. Search and play back the record file(s). Refer to *Chapter 6.1.2* for the detailed information about searching and playback of the record files.




Figure 6.14 Interface of Playback by Time

Click  to add default tag.

Click  to add customized tag and edit tag name.

**Note:** Max. 64 tags can be added to a single video file.

### 3. Tag management.

Click  to check, edit and delete tag(s).

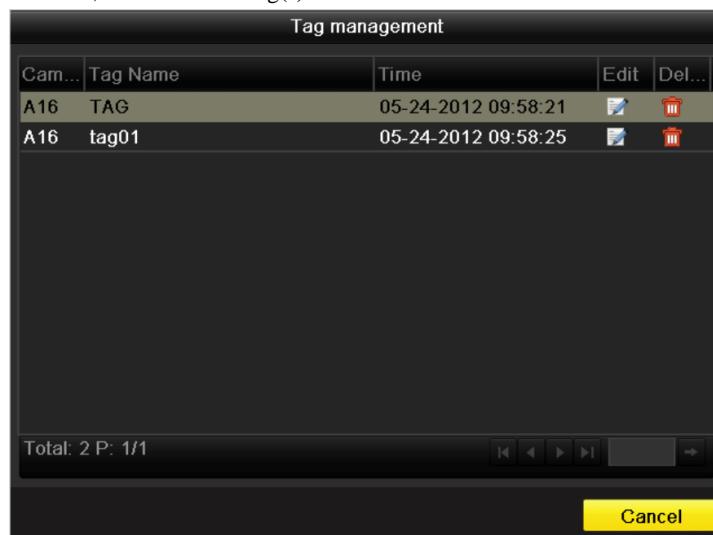





Figure 6.15 Tag Management Interface

#### Steps:

1. Enter Playback interface.  
Menu>Playback

2. Click  and select  to enter the Tag Playback interface.
3. Choose channels, edit the Start and End time, and click  to enter Search Result interface.

**Note:** You can enter keyword in the textbox  to search the tag on your command.

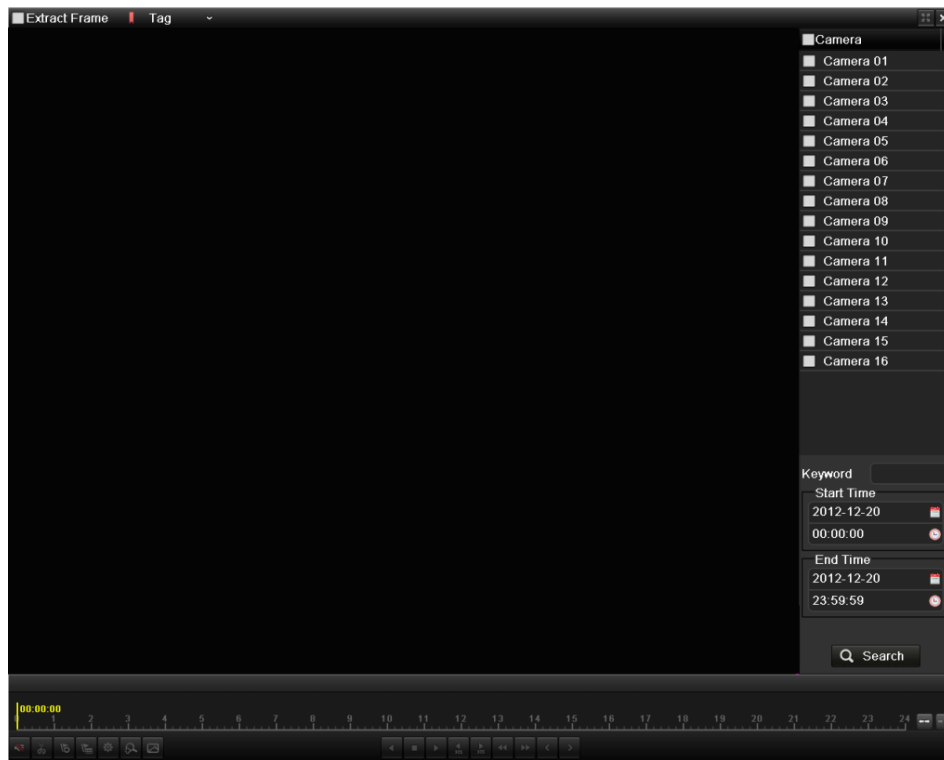

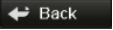


Figure 6. 16 Video Search by Tag

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4. Click  button to play back the file.  
You can click the  button to back to the search interface.  
Pre-play and post-play time can be set according to actual needs.

**Note:** Pre-play time and post-play time is added to the time point of the tag.



Figure 6.17 Interface of Playback by Tag



Figure 6.18 Toolbar of Playback by Tag

Table 6.4 Detailed Explanation of Playback-by-tag Interface

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on /Mute		Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Digital Zoom		Smart Search		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Stop		30s forward		30s reverse
	Slow forward		Fast forward		Previous day		Next day
	Scaling up/down time bar		Process bar		Full Screen		Exit

<input type="checkbox"/> Extract Frame	Frame extracting mode	<input checked="" type="radio"/> Normal	Video type / picture				
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**Notes:**

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.
2. Frame extracting mode is supported by DVR series only.

## 6.1.5 Playing Back by Searching System Log


**Purpose:**

Play back record file(s) associated with channels after searching system logs.

**Steps:**

1. Enter Log Information interface.  
Menu>Maintenance>Log Information>Log Search

Figure 6. 19 Log Search Interface

2. Set search time and type, and click **Search**.
3. Choose a log with record file and click  button to enter Playback interface.

**Note:** If there is no record file at the time point of the log, the message box “No result found” will pop up.

Log Search		Log Export				
Start Time	05-24-2012		00:00:00			
End Time	05-24-2012		23:59:59			
Major Type	All					
Minor Type	All					
No.	Major Type	Time	Minor Type	Paramet...	Play	Details
1	Operation	05-24-2012 08:39:32	Power On	N/A	—	✓
2	Operation	05-24-2012 08:39:36	Local Operation...	N/A	—	✓
3	Operation	05-24-2012 08:39:36	Local Operation...	N/A	—	✓
4	Alarm	05-24-2012 08:39:36	Start Motion Det...	N/A	⏮	✓
5	Information	05-24-2012 08:39:39	Start Recording	N/A	⏮	✓
6	Information	05-24-2012 08:39:40	Start Recording	N/A	⏮	✓
7	Information	05-24-2012 08:39:40	Start Recording	N/A	⏮	✓
8	Alarm	05-24-2012 08:39:43	Stop Motion Det...	N/A	⏮	✓
9	Alarm	05-24-2012 08:39:47	Start Motion Det...	N/A	⏮	✓
10	Alarm	05-24-2012 08:39:58	Stop Motion Det...	N/A	⏮	✓
11	Alarm	05-24-2012 08:40:04	Start Motion Det...	N/A	⏮	✓
12	Alarm	05-24-2012 08:40:24	Stop Motion Det...	N/A	⏮	✓
13	Alarm	05-24-2012 08:40:26	Start Motion Det...	N/A	⏮	✓
Total: 378 P: 1/4						

Figure 6. 20 Result of System Log Search

#### 4. Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.



Figure 6. 21 Interface of Playback by Log

## 6.1.6 Playing Back External Files

### *Purpose:*

Perform the following steps to search and play back record files stored in the external storage devices, e.g., USB flash drives, USB HDDs.

### *Before you start:*

Please insert the external device(s) with record files into the device.

### *Steps:*

1. Enter the Playback interface.  
Menu>Playback
2. Click Normal and select External File to enter the External File Playback interface.  
The files stored in the external device are listed in the right-side list.  
You can click the Refresh button to refresh the file list.
3. Select a record file and click to play back it.

**Note:** Frame extracting mode is supported by DVR series only.

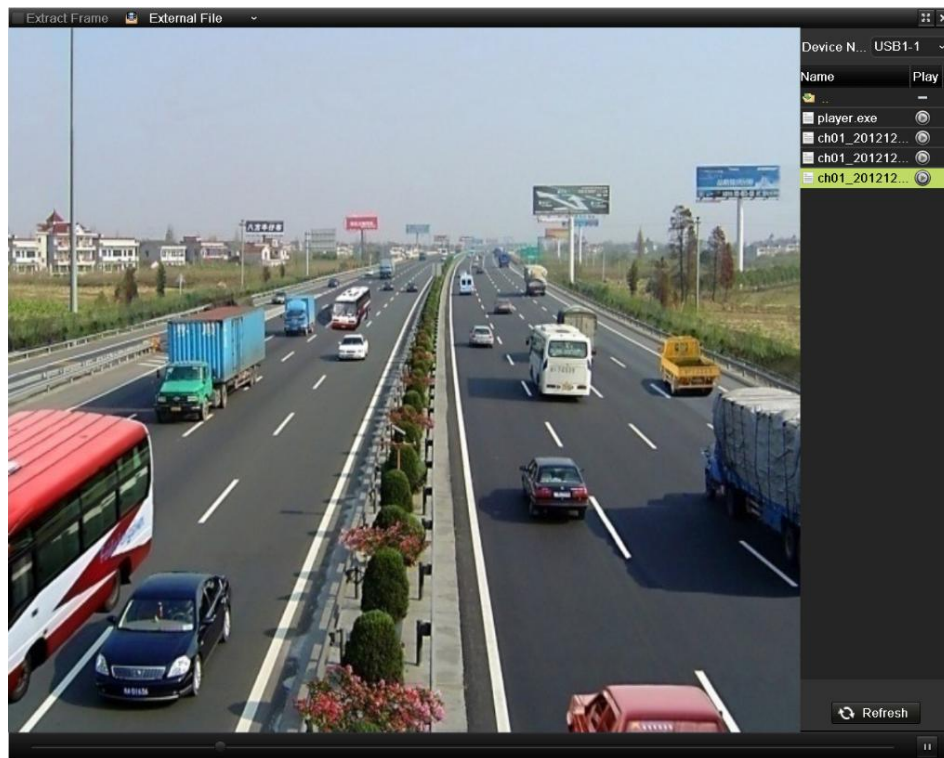


Figure 6. 22 Interface of External File Playback

## 6.1.7 Playing Back Frame Extracting Record

### **Purpose:**

If there are frame extracting record files existed in the HDD, you can search and play back them.

### **Notes:**

- 1) Frame extracting record is supported by DVR series only.
- 2) The frame extracting record is with low bitrate and the frame rate of 1 fps.

### **Steps:**

1. Enter the Playback interface.  
Menu>Playback
2. Check ☒ checkbox to select the frame extracting mode.

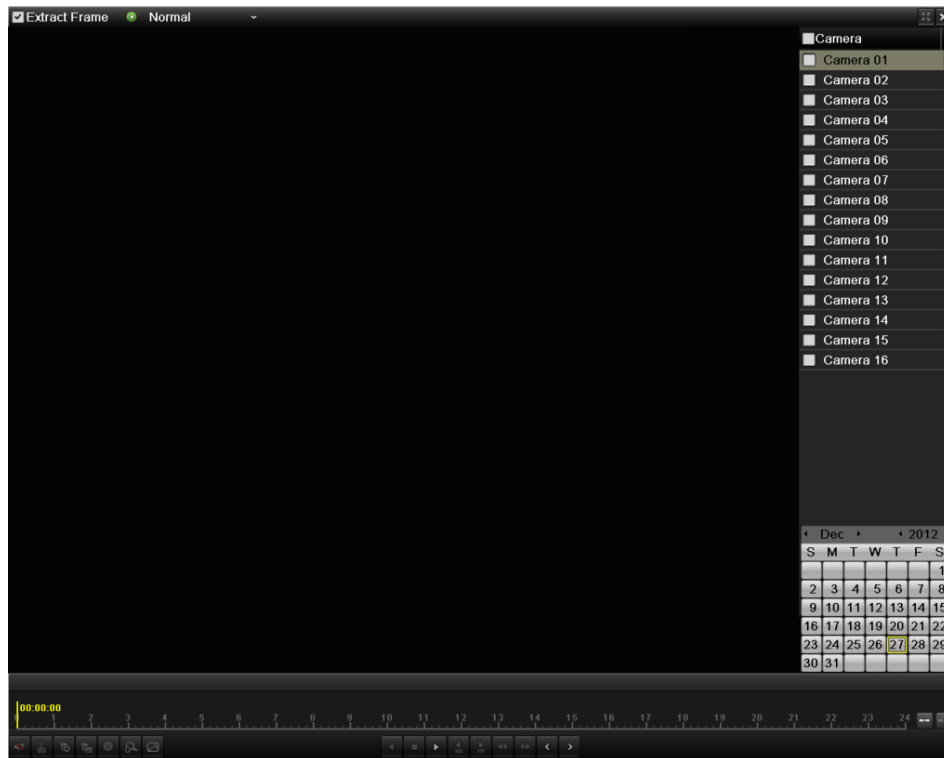


Figure 6. 23 Frame Extracting Record Playback Interface

3. Select the record type (Normal, Event and Tag) in the drop-down list on the top-left side and search the corresponding files. For detailed information about searching record files of each record type, please refer to *Chapter 6.1.2*, *Chapter 6.1.3* or *Chapter 6.1.4*.
4. Play back the record files if available.  
**Note:** For detailed information about the control button on the playback interface, please refer to *Chapter 6.1.2*, *Chapter 6.1.3* or *Chapter 6.1.4*.





Figure 6. 24 Frame Extracting Record Playback

## 6.2 Auxiliary Functions of Playback






### 6.2.1 Playing Back Frame by Frame

**Purpose:**



Play video files frame by frame, in order to check image details of the video when abnormal events happen.

**Steps:**

- **Using a Mouse:**

Go to Playback interface. If you choose playback of the record file: click button  and  until the speed changes to *Single* frame and one click on the playback screen represents playback of one frame. If you choose reverse playback of the record file: click button  and  until the speed changes to *Single* frame and one click on the playback screen represents reverse playback of one frame. It is also feasible to use button  in toolbar.

- **Using the Front Panel:**

Rotate and hold the outer ring on Jog Shuttle counterclockwise (for DS-8100/8000-ST series only) or click the  button to set the speed to *Single* frame. One click on button , one click on the playback screen or **Enter** button on the front panel represents playback or reverse playback of one frame.

### 6.2.2 Smart Search

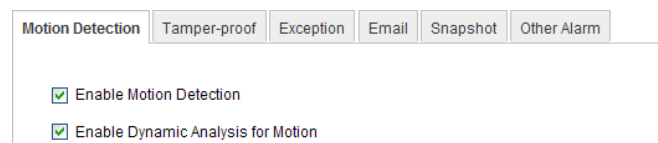
**Purpose:**

In order to locate motion detection event easily and accurately in the playback progress bar, you are allowed to analyze a certain area (scene) dynamically, and to get all of the related motion detection events that occurred in this area.

**Note:** For network cameras, the smart search function should be supported by the cameras.

**Before you start (for network cameras only):**

1. Log into the network camera via the web browser. Enter the motion detection configuration interface by Configuration> Advanced Configuration> Events> Motion Detection, and enable the Dynamic Analysis for Motion by checking the checkbox of it.






2. Enable the motion detection function and set the arming area to the full-screen in the device local menu. Please refer to *chapter 8.1* for details.

**Steps:**

1. Enter the Playback interface and play a record file. Refer to Chapter 6.1.2 for the detailed information about searching and playback of the record files.



Figure 6.25 Interface of Playback by Time

2. Click the  on the playback control toolbar to enter Smart Search mode.
3. Click and drag the mouse to draw area(s). You can click button  to set the full screen as target searching area. After drawing area(s), click button  to execute smart search in this area.

**Note:** Multi-area and full-screen searching modes are supported.

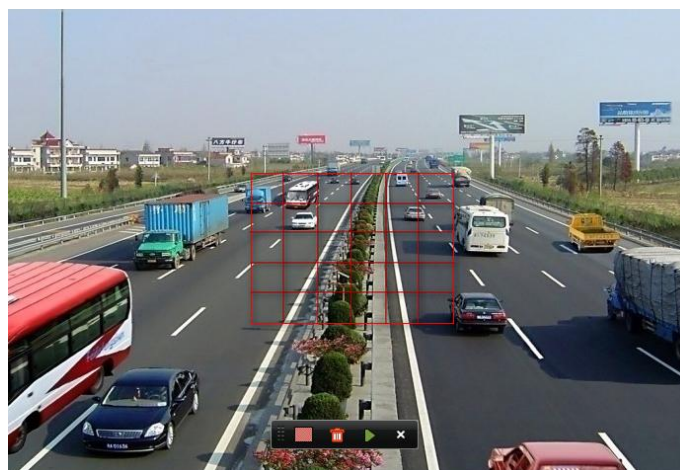



Figure 6.26 Draw Area of Smart Search

The results of smart search will be marked as  in the progress bar.

The hidden list of record files display when moving the mouse to the right of the playback interface.



Figure 6.27 Smart Search Result

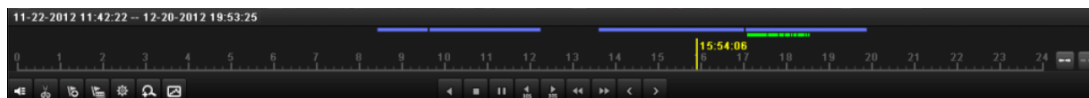


Figure 6.28 Toolbar of Smart Search Playback

**Note:** The 11-22-2012 11:42:22 -- 12-19-2012 19:53:25 indicates the start/end time of the record.

Table 6.5 Detailed Explanation of Smart-search-playback Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on /Mute		Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Digital Zoom		Smart Search		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Stop		30s forward		30s reverse
	Slow forward		Fast forward		Previous day		Next day
	Scaling up/down time bar		Process bar		Full Screen		Exit

<input type="checkbox"/> Extract Frame	Frame extracting mode	<input checked="" type="radio"/> Normal	Video type / picture	<div><div></div></div>	Smart search result		
--	-----------------------------	---	-------------------------	------------------------	---------------------------	--	--

**Notes:**

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.
2. Frame extracting mode is supported by DVR series only.

## 6.2.3 Digital Zoom

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

**Steps:**


1. Enter the Playback interface and play a record file. Refer to *Chapter 6.1.2* for the detailed information about searching and playback of the record files.
2. Click the  on the playback control toolbar to enter Digital Zoom mode.
3. Use the mouse to draw a red rectangle and the image within it will be enlarged up to 16 times.
4. You can right-click to exit the Digital Zoom mode.



Figure 6.29 Draw Area for Digital Zoom

## 6.2.4 Reverse Playback of Multi-channel

**Purpose:**

You can play back record files of multi-channel reversely. For DS-9100/8100HFI-ST & DS-9100HFI-RT/XT series DVR, up to 16-ch simultaneous reverse playback is supported. While for DS-9000/8000HFI-ST & DS-9000HFI-RT/XT series Hybrid DVR, up to 16-ch (with 704\*576 resolution) simultaneous reverse playback is supported; up to 8-ch (with 1280\*720 resolution) simultaneous reverse playback is supported; up to 4-ch



(with 1920\*1080P resolution) simultaneous reverse playback is supported and up to 1-ch (with 2560\*1920 resolution) reverse playback is supported.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

**Steps:**

1. Enter the Playback interface.


Menu>Playback

2. Check ☒ checkbox to select the channel(s) and double-click to select a date on the calendar.

**Note:** If more than one channel is optional, the simultaneous playback will be activated.



Figure 6. 30 4-ch Synchronous Playback Interface

3. Click  to play back the record files reversely.

## 6.3 Picture Playback

### *Purpose:*

Search and view captured pictures stored in HDD.

### *Steps:*

1. Enter Playback interface.

Menu>Playback

2. Click  and select  to enter the Picture Playback interface.

**Note:** Frame extracting mode is supported by DVR series only.

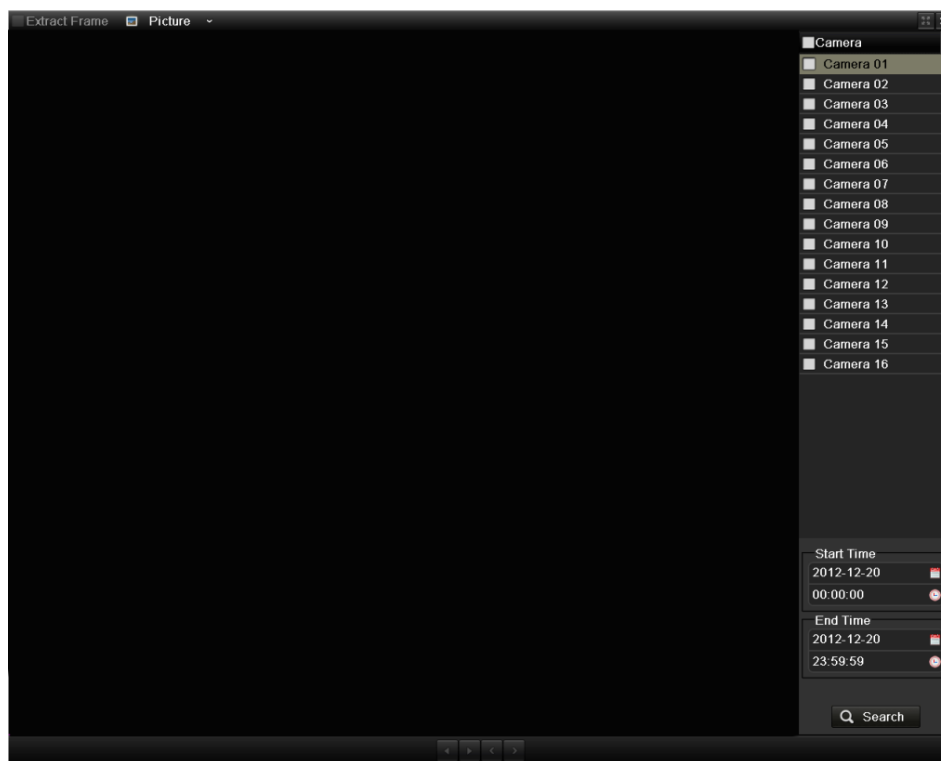



Figure 6. 31 Picture Playback Interface

3. Check ☒ checkbox to select the channel(s) and set the Start and End time.

4. Click  to enter Search Result interface.

**Note:** Up to 4000 pictures can be displayed each time.

5. Choose a picture you want to view and click  button.

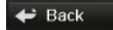
You can click  to return to the search interface.



Figure 6. 32 Result of Picture Playback

6. The toolbar in the bottom part of Playback interface can be used to control playing process.

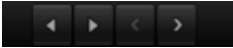






Figure 6. 33 Picture Playback Toolbar

Table 6. 6 Detailed Explanation of Picture-playback Toolbar

Button	Function	Button	Function	Button	Function	Button	Function
	Play reverse		Play		Previous picture		Next picture



## **Chapter 7 Backup**

## 7.1 Backing up Record Files

### *Before you start:*

Please insert the backup device(s) into the device.

### 7.1.1 Quick Export

#### *Purpose:*

Export record files to backup device(s) quickly.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

#### *Steps:*

1. Enter Video Export interface.

Menu>Export>Normal

Choose the channel(s) you want to back up and click **Quick Export**.

**Note:** The time duration of record files on a specified channel cannot exceed one day. Otherwise, the message box “Max. 24 hours are allowed for quick export.” will pop up.

**Normal**

☐ Analog ☒ A1 ☐ A2 ☐ A3 ☐ A4 ☐ A5 ☐ A6 ☐ A7 ☐ A8  
☐ A9 ☐ A10 ☐ A11 ☐ A12 ☐ A13 ☐ A14 ☐ A15 ☐ A16

Start/End time of record 2012-05-23 08:39:25 -- 2012-05-24 13:56:19

Record Mode	Normal	▼
Record Type	All	▼
File Type	All	▼
Start Time	2012-05-22	00:00:00
End Time	2012-05-24	23:59:59

Figure 7. 1 Quick Export Interface for DVR Series

2. Export.

Go to Export interface, choose backup device and click **Export** to start exporting.

**Note:** Here we use USB Flash Drive and please refer to *Chapter 7.1.2 Backing up by Normal Video Search* for more backup devices supported by the device.

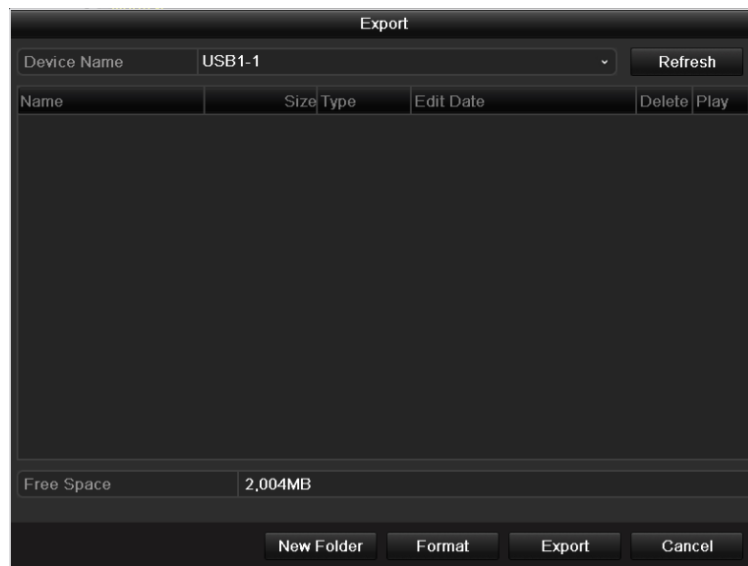


Figure 7. 2 Quick Export using USB1-1

---

Stay in the Exporting interface until all record files are exported.

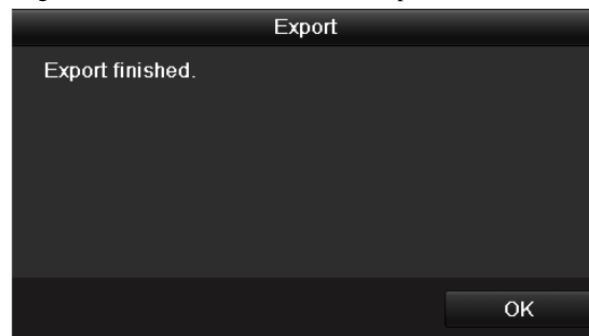



Figure 7. 3 Export Finished

---

**3. Check backup result.**

Choose the record file in Export interface and click button  to check it.

**Note:** The Player player.exe will be exported automatically during record file export.

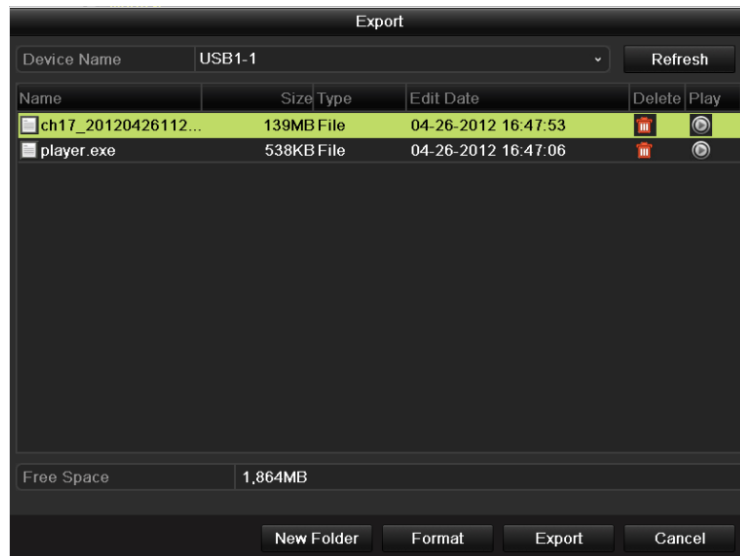


Figure 7. 4 Checkup of Quick Export Result Using USB1-1

## 7.1.2 Backing up by Normal Video Search

### **Purpose:**

The record files can be backup to various devices, such as USB devices (USB flash drives, USB HDDs, USB writer), DVD-R/W and eSATA HDD.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### **Backup using USB flash drives, USB HDDs, USB writer and DVD-R/W**

#### **Steps:**

1. Enter Export interface.  
Menu>Export>Normal
2. Set search condition and click **Search** to enter the search result interface.

#### **Notes:**

- 1) Frame Extracting record mode is supported by the DVR series only.
- 2) Six different Record types are selectable: Continuous, Motion, Alarm, Motion | Alarm, Motion & Alarm, Command Triggered and Manual. The command triggered record is configured by the platform when the device accessed via the platform.
- 3) Two different File types are selectable: Unlocked and Locked.

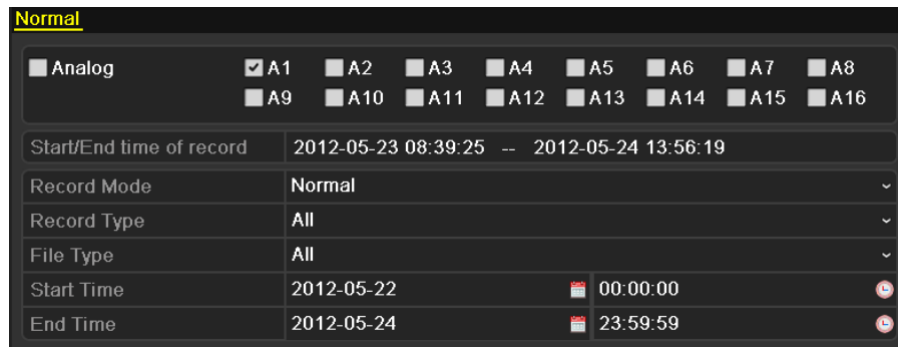


Figure 7. 5 Normal Video Search for Backup

### 3. Select record files you want to back up.

Click button to play the record file if you want to check it.

Check the checkbox before the record files you want to back up.

**Note:** The size of the currently selected files is displayed in the lower-left corner of the window.

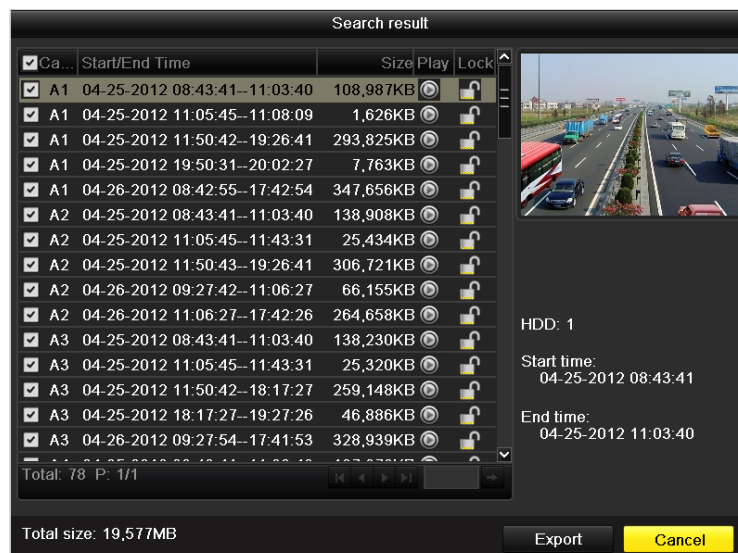


Figure 7. 6 Result of Normal Video Search for Backup

### 4. Export.

Click and start backup.

**Note:** If the inserted device is not recognized:

- Click .
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drives or USB HDDs via the device. USB writer and DVD-R/W cannot be formatted.



Figure 7. 7 Export by Normal Video Search using USB Flash Drive



Figure 7. 8 Export by Normal Video Search using USB Writer

---

Stay in the Exporting interface until all record files are exported with pop-up message box “Export finished”.

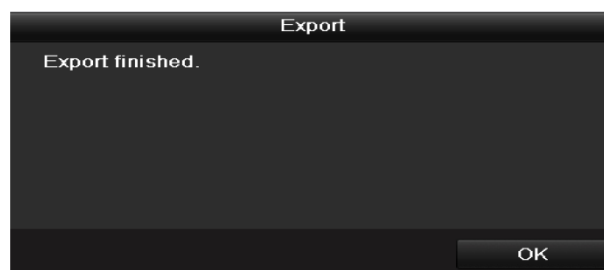



Figure 7. 9 Export Finished

---

##### 5. Check backup result.

Choose the record file in Export interface and click button  to check it.

**Note:** The Player player.exe will be exported automatically during record file export.

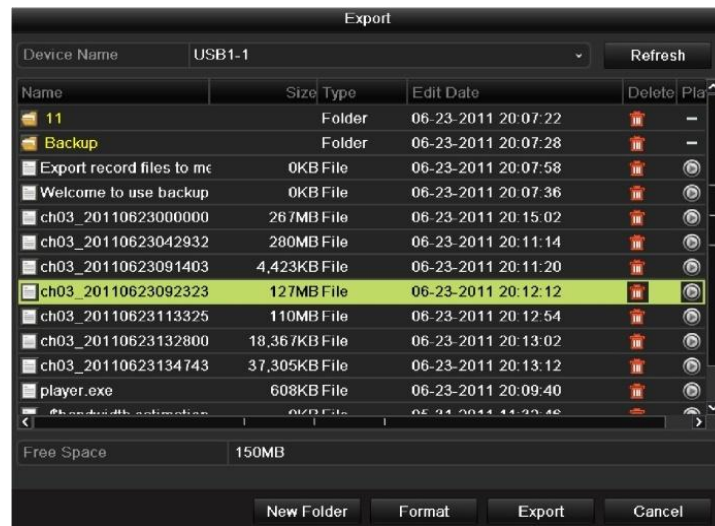


Figure 7. 10 Checkup of Export Result using USB Flash Drive

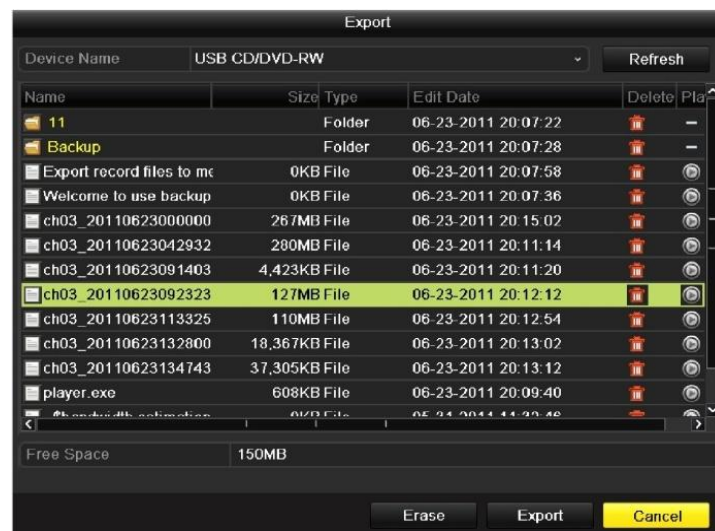


Figure 7. 11 Checkup of Export Result using USB Writer

### Backup using eSATA HDDs

#### Steps:

1. Set the working mode of eSATA HDD as "Export".

Menu>Record>Advanced

Choose **eSATA** to eSATA1 and set its usage as Export. Click **Apply** and click **Yes** when the message box "System will reboot automatically if the usage of eSATA is changed. Continue?" pops up.

**Note:** The usages of eSATA contain Record/Capture and Export. And changes in usage will take effective after rebooting the device.

2. Enter Export interface.

Menu>Export>Normal

Set search condition and click **Search** to enter the search result interface.

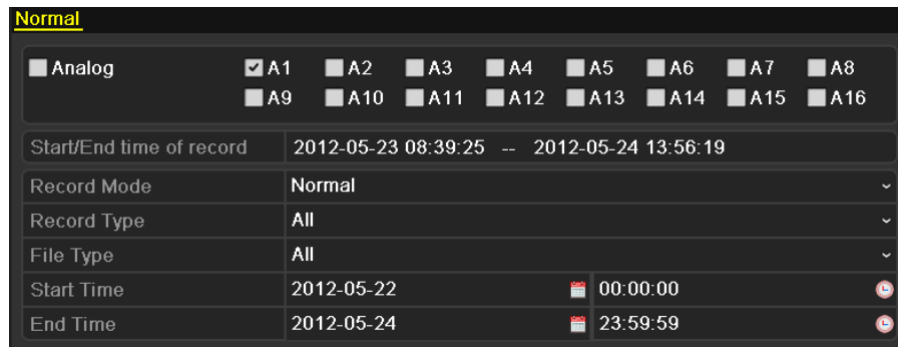


Figure 7. 12 Normal Video Search for Backup

### 3. Select record files you want to back up.

Click button to play the record file if you want to check it.

Check record files you want to back up.

**Note:** The size of the currently selected files is displayed in the lower-left corner of the window.

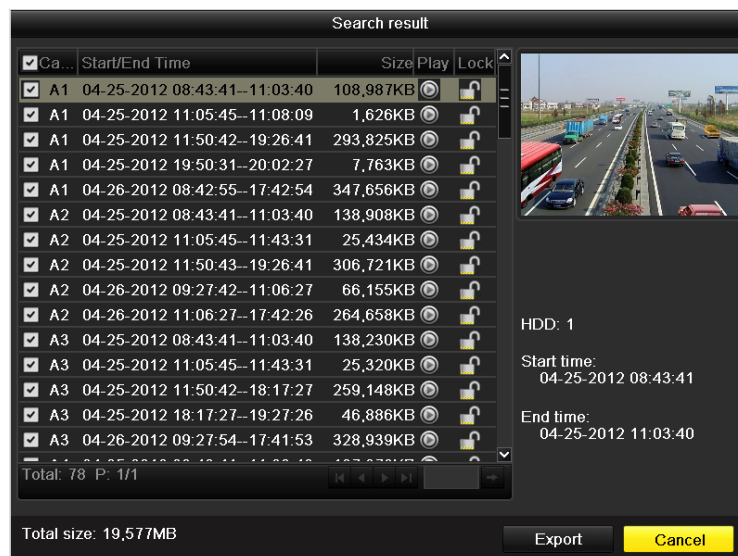


Figure 7. 13 Result of Normal Video Search for Backup

### 4. Export.

Click and start backup.

**Note:** Please format the eSATA first when using it for the first time. If the inserted eSATA HDD is not recognized:

- Click .
- Reconnect device.
- Check for compatibility from vendor.

You can also format eSATA HDD via the device.





Figure 7. 14 Export by Normal Video Search Using eSATA HDD

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

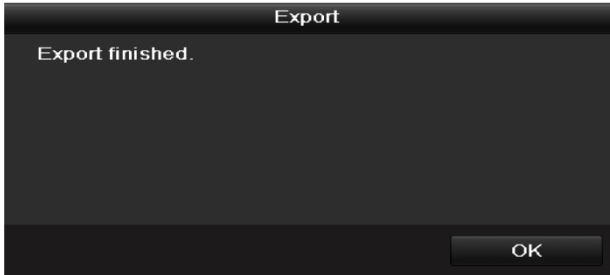



Figure 7. 15 Export Finished

5. Check backup result.

Choose the record file in Export interface and click button  to check it.

**Note:** The Player player.exe will be exported automatically during record file export.

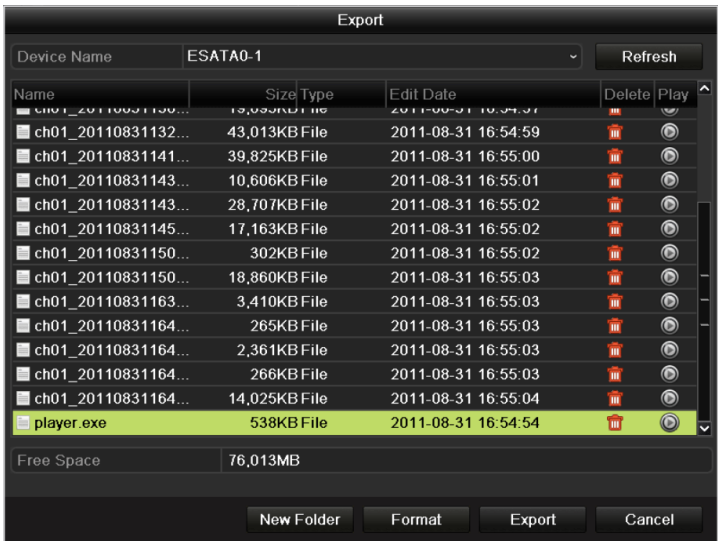


Figure 7. 16 Checkup of Export Result Using eSATA HDD

### 7.1.3 Backing up by Event Search

**Purpose:**

Back up event-related record files using USB devices (USB flash drives, USB HDDs, USB writer), DVD-R/W or eSATA HDD. Quick Backup and Normal Backup are supported.

**Steps:**

1. Enter Export interface.

Menu>Export>Event

- 1) Select Alarm Input/Motion from the dropdown list of Event Type.

**Note:** Here we take Alarm Input as an example.

- 2) Select the alarm input No. and time.

- 3) Click **Search** to enter the Search Result interface.

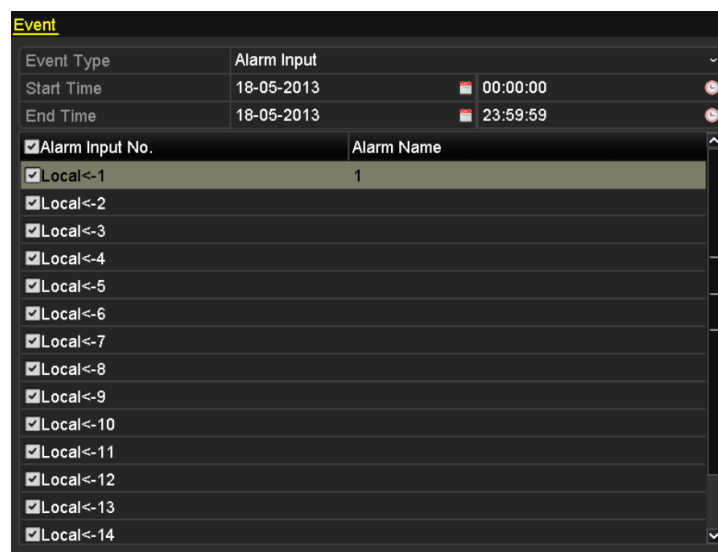


Figure 7. 17 Event Search for Backup

2. Select record files to export.

- 1) Select an alarm input in the list and click **Quick Export** to enter Export interface.

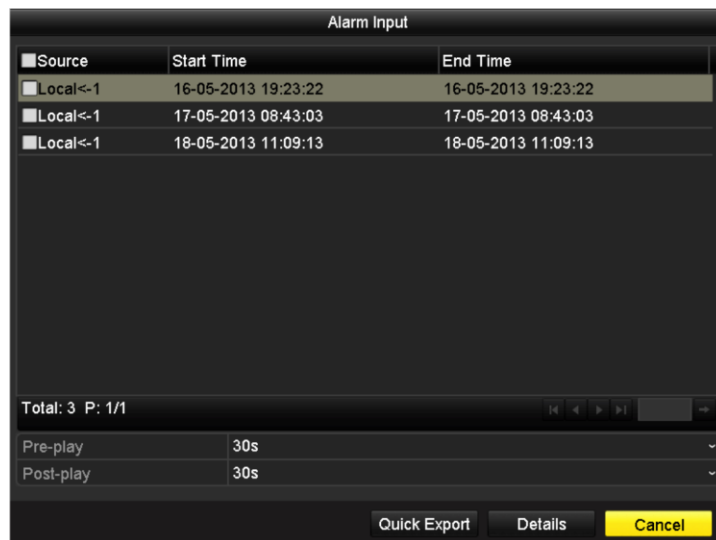


Figure 7.18 Result of Event Search

- 2) Clicking **Details** will take you to the interface with detailed information of all channels triggered by the selected alarm input. You can view detailed information of the record file, e.g. start time, end time and file size.

**Note:** The size of the currently selected files is displayed in the lower-left corner of the window.

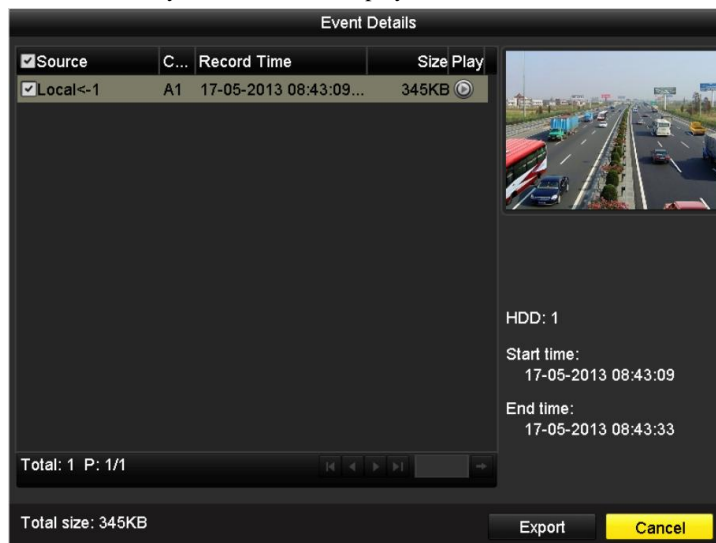


Figure 7.19 Event Details Interface

### 3. Export.

Click **Export** and start backup.

**Note:** If the inserted USB device is not recognized:

- Click **Refresh**.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drive or USB HDDs via the device.



Figure 7. 20 Export by Event Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

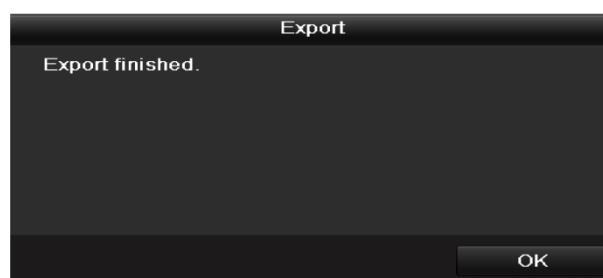


Figure 7. 21 Export Finished

#### 4. Check backup result.

**Note:** The Player player.exe will be exported automatically during record file export.

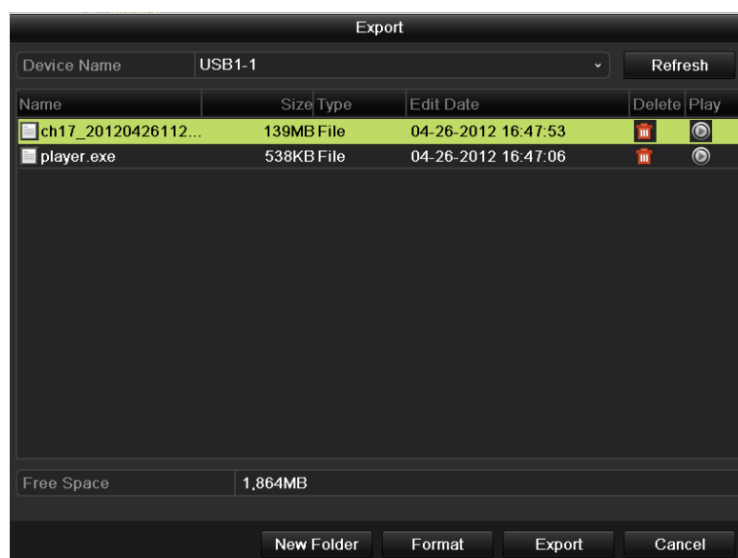




Figure 7. 22 Checkup of Event Export Result Using USB Flash Drive

## 7.1.4 Backing up Video Clips

### Purpose:

You may also select video clips to export directly during Playback, using USB devices (USB flash drives, USB HDDs, USB writer), DVD-R/W or eSATA HDD.

### Steps:

1. Enter Playback interface and play back the record file you want to set video clips.  
Please refer to *Chapter 6.1 Playing Back Record Files*.
2. During playback, use buttons  and  in the playback toolbar to start or stop clipping record file(s).
3. Quit Playback interface after finishing clipping and you will then be prompted to save the clips.

**Note:** A maximum of 30 clips can be selected for each channel.



Figure 7. 23 Interface of Playback by Time

4. Click **Yes** to save video clips and enter Export interface, or click **No** to quit and do not save video clips.

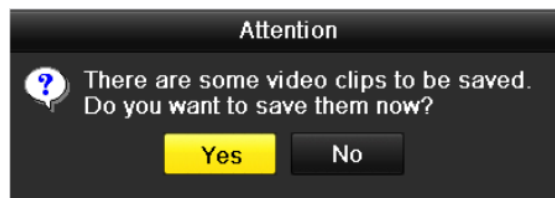


Figure 7. 24 Attention to Video Clip Saving

5. Export.

Click **Export** and start backup.

**Note:** If the inserted USB device is not recognized:

- Click **Refresh**.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drive or USB HDDs via the device.

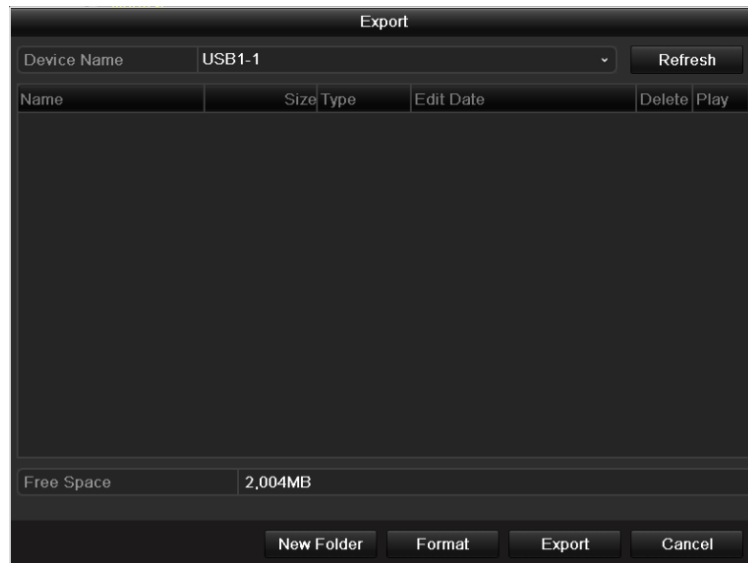


Figure 7. 25 Export Video Clips Using USB Flash Drive

---

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

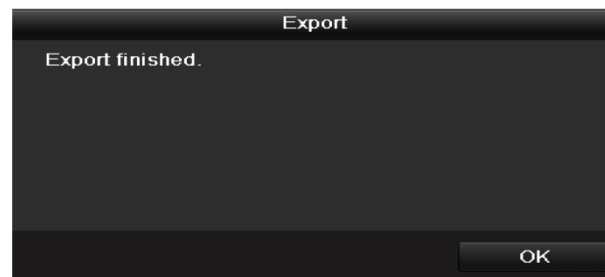


Figure 7. 26 Export Finished

- 
6. Check backup result.

**Note:** The Player player.exe will be exported automatically during record file export.

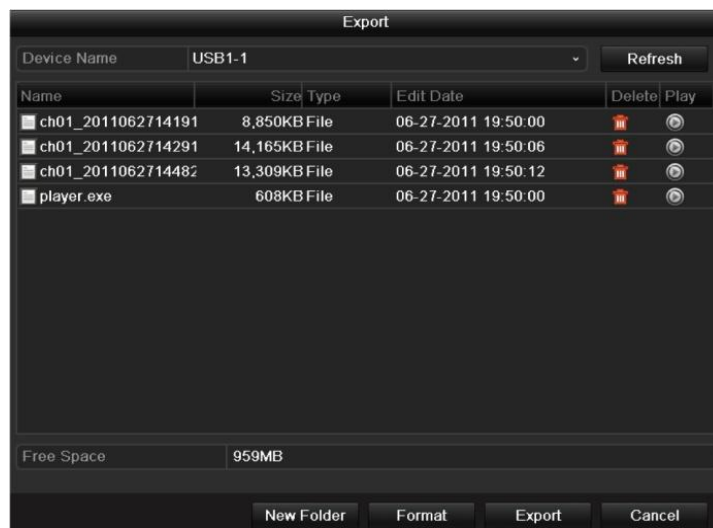


Figure 7. 27 Checkup of Video Clips Export Result Using USB Flash Drive

---

## 7.2 Backing up Pictures

### Purpose:

Back up pictures using USB devices (USB flash drives, USB HDDs, USB writer), DVD-R/W or eSATA HDD.

### Steps:

1. Enter Export interface.

Menu>Export>Picture

Select channel(s), picture type, start time and end time, and click **Search** to enter the Search Result interface.

**Picture**

<input checked="" type="checkbox"/> Analog	<input checked="" type="checkbox"/> A1	<input checked="" type="checkbox"/> A2	<input checked="" type="checkbox"/> A3	<input checked="" type="checkbox"/> A4	<input checked="" type="checkbox"/> A5	<input checked="" type="checkbox"/> A6	<input checked="" type="checkbox"/> A7	<input checked="" type="checkbox"/> A8
	<input checked="" type="checkbox"/> A9	<input checked="" type="checkbox"/> A10	<input checked="" type="checkbox"/> A11	<input checked="" type="checkbox"/> A12	<input checked="" type="checkbox"/> A13	<input checked="" type="checkbox"/> A14	<input checked="" type="checkbox"/> A15	<input checked="" type="checkbox"/> A16
Picture Type	All							
Start Time	2012-04-27				00:00:00			
End Time	2012-04-27				23:59:59			

Figure 7. 28 Picture Search for Backup in DVR Series

**Picture**

<input checked="" type="checkbox"/> Analog	<input checked="" type="checkbox"/> A1	<input checked="" type="checkbox"/> A2	<input checked="" type="checkbox"/> A3	<input checked="" type="checkbox"/> A4	<input checked="" type="checkbox"/> A5	<input checked="" type="checkbox"/> A6	<input checked="" type="checkbox"/> A7	<input checked="" type="checkbox"/> A8
	<input checked="" type="checkbox"/> A9	<input checked="" type="checkbox"/> A10	<input checked="" type="checkbox"/> A11	<input checked="" type="checkbox"/> A12	<input checked="" type="checkbox"/> A13	<input checked="" type="checkbox"/> A14	<input checked="" type="checkbox"/> A15	<input checked="" type="checkbox"/> A16
<input checked="" type="checkbox"/> IP Camera	<input checked="" type="checkbox"/> D1	<input checked="" type="checkbox"/> D2	<input checked="" type="checkbox"/> D3	<input checked="" type="checkbox"/> D4	<input checked="" type="checkbox"/> D5	<input checked="" type="checkbox"/> D6	<input checked="" type="checkbox"/> D7	<input checked="" type="checkbox"/> D8
	<input checked="" type="checkbox"/> D9	<input checked="" type="checkbox"/> D10	<input checked="" type="checkbox"/> D11	<input checked="" type="checkbox"/> D12	<input checked="" type="checkbox"/> D13	<input checked="" type="checkbox"/> D14	<input checked="" type="checkbox"/> D15	<input checked="" type="checkbox"/> D16
	<input checked="" type="checkbox"/> D17	<input checked="" type="checkbox"/> D18	<input checked="" type="checkbox"/> D19	<input checked="" type="checkbox"/> D20	<input checked="" type="checkbox"/> D21	<input checked="" type="checkbox"/> D22	<input checked="" type="checkbox"/> D23	<input checked="" type="checkbox"/> D24
	<input checked="" type="checkbox"/> D25	<input checked="" type="checkbox"/> D26	<input checked="" type="checkbox"/> D27	<input checked="" type="checkbox"/> D28	<input checked="" type="checkbox"/> D29	<input checked="" type="checkbox"/> D30	<input checked="" type="checkbox"/> D31	<input checked="" type="checkbox"/> D32
Picture Type	All							
Start Time	2012-04-27				00:00:00			
End Time	2012-04-27				23:59:59			

Figure 7. 29 Picture Search for Backup in HDVR Series

**Note:** Picture search for backup of **IP Camera** is supported by HDVR series only.

2. Select pictures you want to back up.

Check the checkbox before the pictures you want to back up and click **Export**.

**Note:** Here we take USB flash drive as an example. For more backup devices, please refer to *Chapter 7.1.2 Backing up by Normal Video Search*.



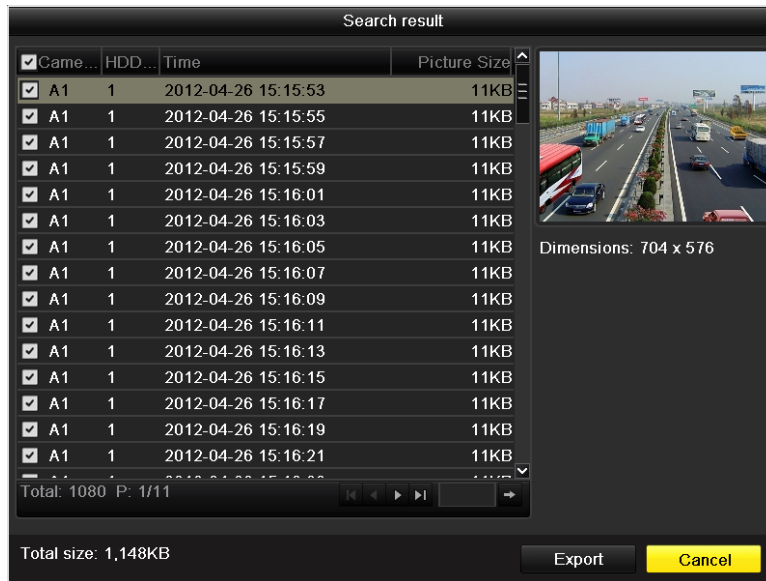


Figure 7. 30 Result of Picture Search

### 3. Export.

Click **Export** and start backup.

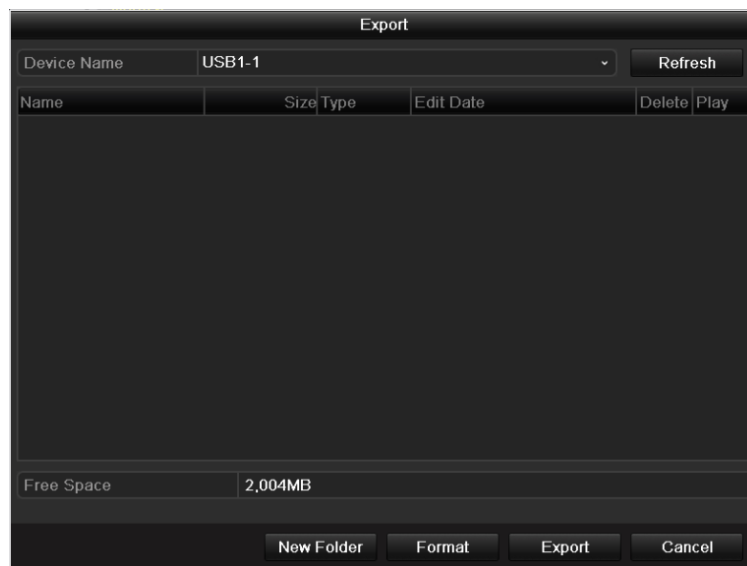


Figure 7.31 Export Pictures Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

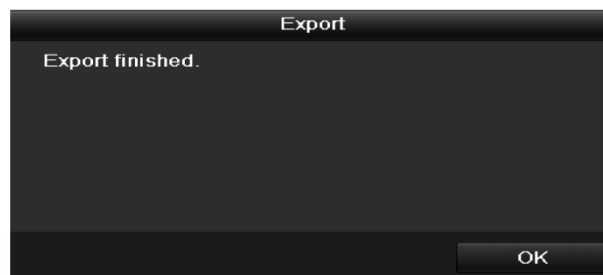


Figure 7.32 Export Finished

4. Check backup result.

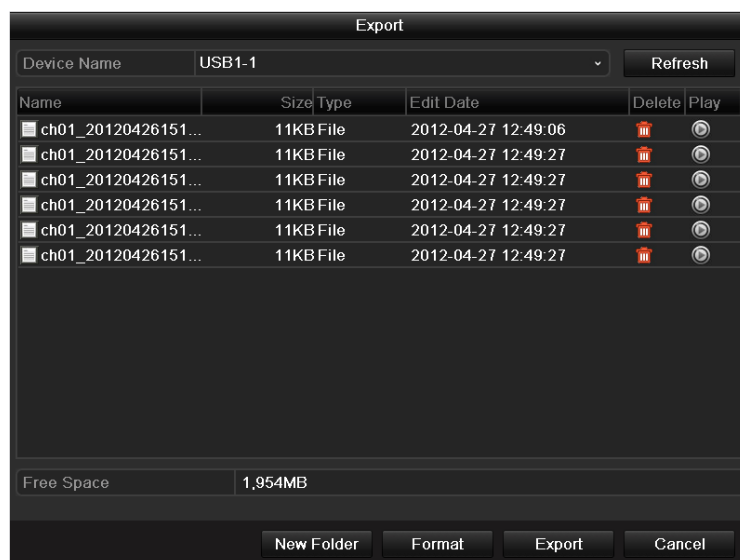


Figure 7.33 Checkup of Picture Export Using USB Flash Drive

---

## 7.3 Managing Backup Devices

**Management of USB flash drives, USB HDDs and eSATA HDDs.**

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

**Steps:**

1. Enter Search Result interface of record files.

Menu>Export>Normal

Set search condition and click **Search** to enter Search Result interface.

**Note:** At least one channel shall be selected.

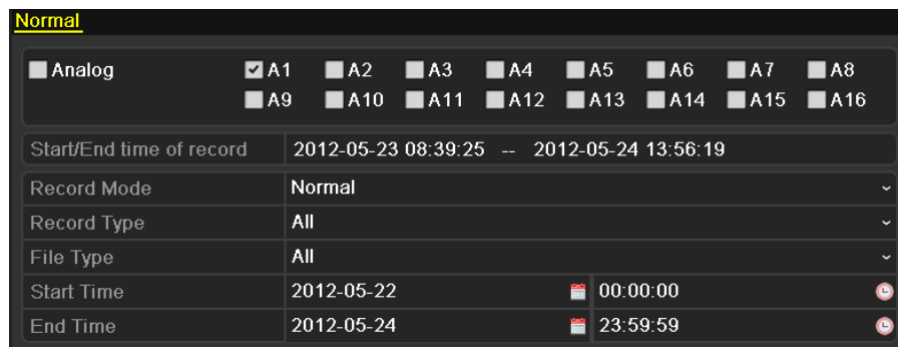


Figure 7.34 Normal Video Search for Backup

2. Select record files you want to back up.

Click **Export** to enter Export interface.

**Note:** At least one record file shall be selected.

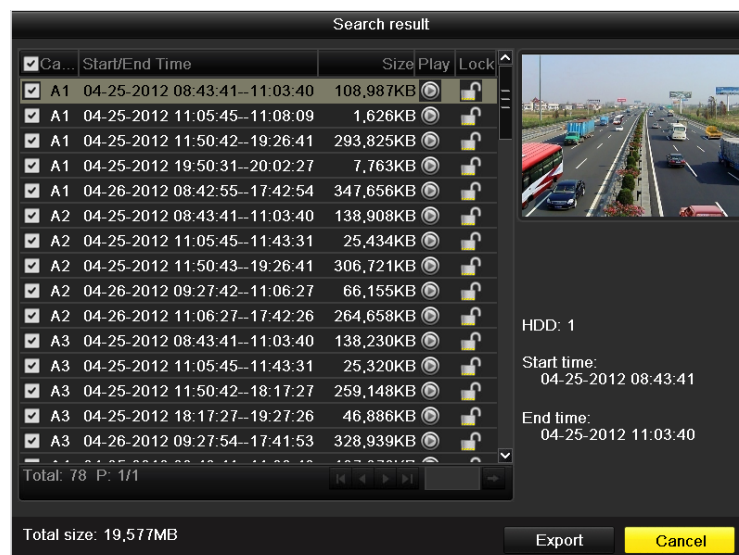



Figure 7.35 Result of Normal Video Search for Backup

3. Backup device management.

Click **New Folder** if you want to create a new folder in the backup device.

Select a record file or folder in the backup device and click **Delete** if you want to delete it.

Select a record file in the backup device and click  to play it.

Click **Format** to format the backup device. Two kinds of file system can be configurable, including FAT32 and NTFS.

**Note:** If the inserted USB device is not recognized:

- Click **Refresh**.
- Reconnect device.
- Check for compatibility from vendor.

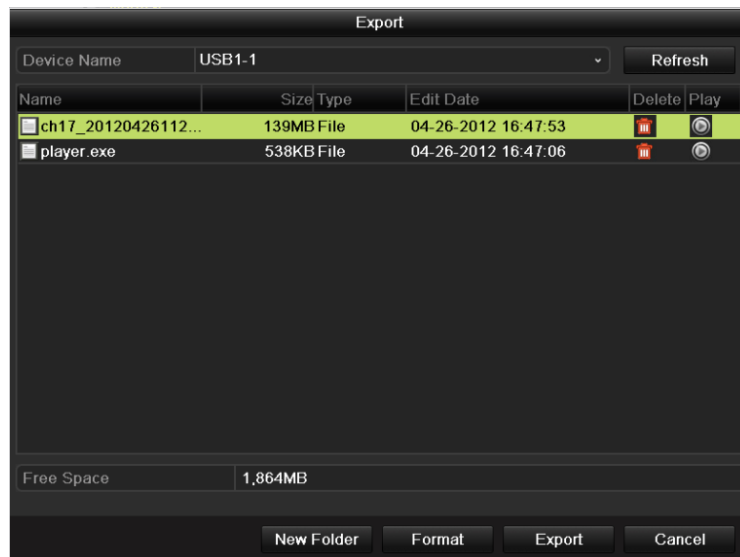


Figure 7. 36 USB Flash Drive Management

### Management of USB writers and DVD-R/W

1. Enter Search Result interface of record files.

Menu>Export>Normal

Set search condition and click **Search** to enter Search Result interface.

**Note:** At least one channel shall be selected.

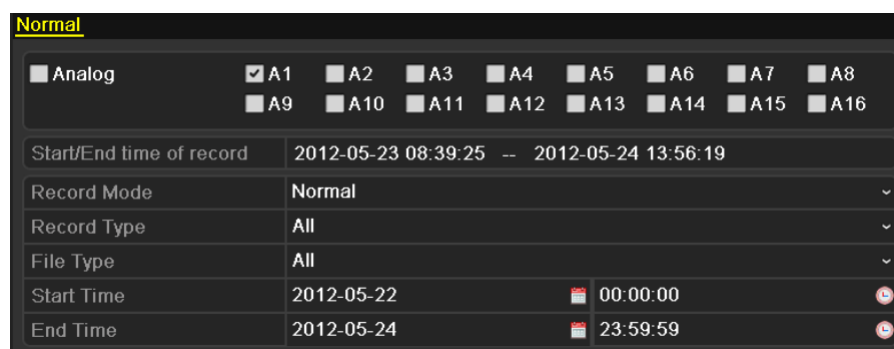


Figure 7. 37 Normal Video Search for Backup

2. Select record files you want to back up.

Click **Export** to enter Export interface.

**Note:** At least one record file shall be selected.



Figure 7. 38 Result of Normal Video Search for Backup

### 3. Backup device management.

Click **Erase** if you want to erase the files from a re-writable CD/DVD.

**Note:** There must be a re-writable CD/DVD when you make this operation.

**Note:** If the inserted USB writer or DVD-R/W is not recognized:

- Click **Refresh**.
- Reconnect device.
- Check for compatibility from vendor.



Figure 7. 39 USB Writer Management

## **Chapter 8 Alarm Settings**

## 8.1 Setting Motion Detection

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

**Steps:**

1. Enter Motion Detection interface and choose a camera you want to set motion detection.

Menu> Camera> Motion

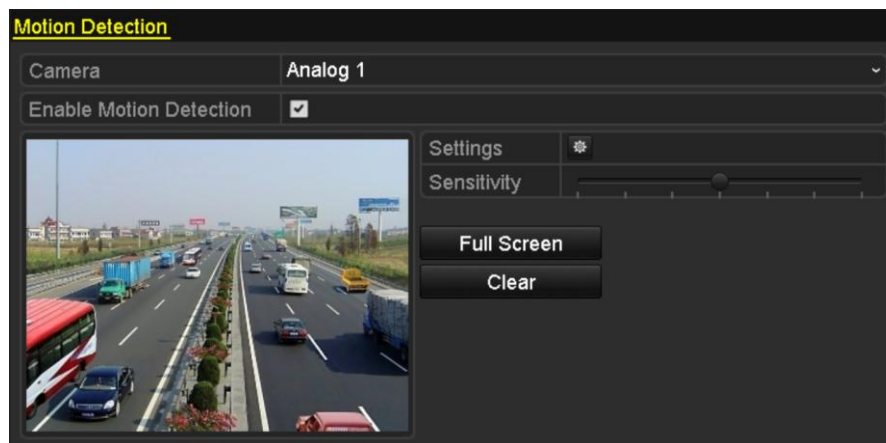



Figure 8.1 Motion Detection Settings Interface

2. Set detection area and sensitivity.

Check ☒ checkbox to enable motion detection, use the mouse to draw detection area(s) and drag the sensitivity bar to set sensitivity.



Figure 8.2 Set Detection Area and Sensitivity

3. Click  to configure the motion detection settings. Click **Trigger Channel** tab and select one or more channels which will start to record/capture or become full-screen monitoring when motion alarm is triggered. Click **Apply** to save the settings.

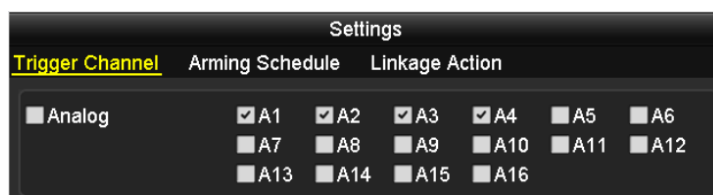


Figure 8.3 Set Trigger Camera of Motion Detection for DVR Series

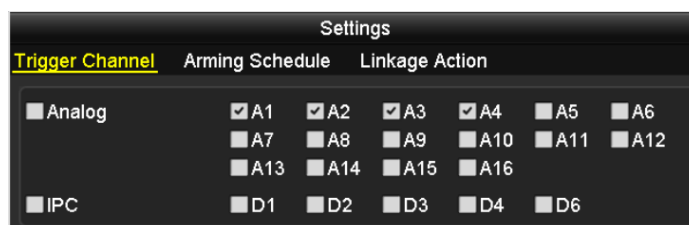


Figure 8.4 Set Trigger Camera of Motion Detection for HDVR Series

**Note:** Triggering **IP Camera** is supported by HDVR series only.

4. Set arming schedule of the channel.

Select **Arming Schedule** tab and set arming schedule of the channel.

Choose one day of a week and up to eight time periods can be set within each day. Set up arming schedule of other days of a week. You can also use **Copy** to copy an arming schedule to other days. Click **Apply** to save the settings.

**Note:** Time periods shall not be repeated or overlapped.

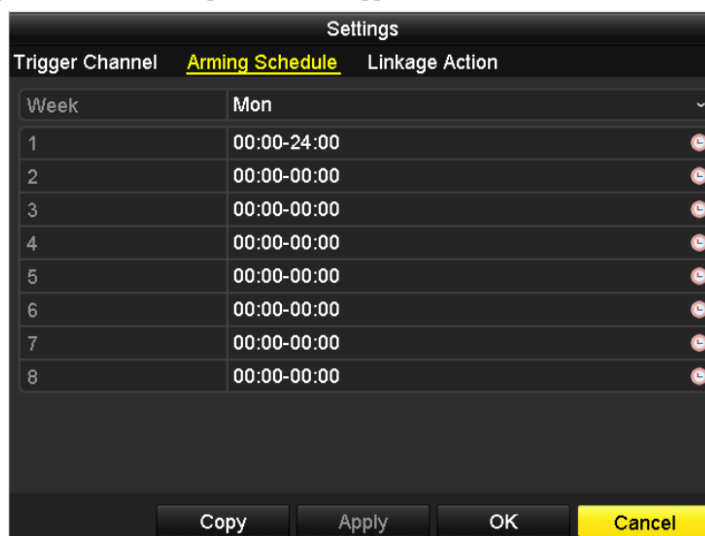


Figure 8.5 Set Arming Schedule of Motion Detection

5. Click **Linkage Action** tab to set alarm response actions of motion detection (please refer to *Chapter 8.6*).



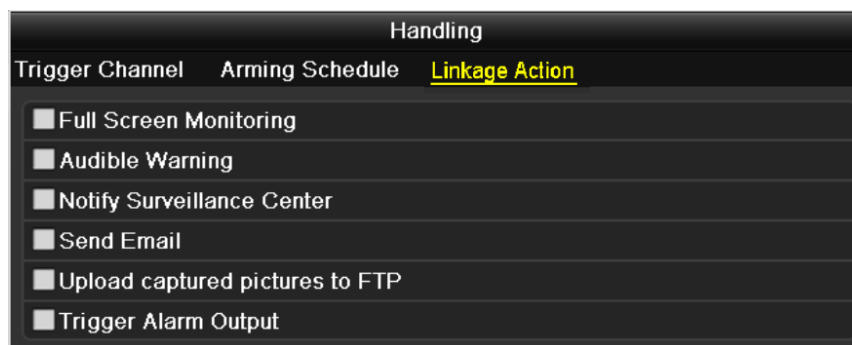


Figure 8.6 Set Alarm Response Actions of Motion Detection

**Note:** Upload captured pictures to FTP is only supported by DVR series.

Click **Apply** to save the settings. Click **OK** to complete the motion detection settings of the channel.

- If you want to set motion detection for another channel, repeat the above steps or just click **Copy** in the Motion Detection interface to copy the above settings to it.

**Note:** You are not allowed to copy the “Trigger Channel” action and motion detection settings to IP camera.



Figure 8.7 Copy Settings of Motion Detection

## 8.2 Setting Sensor Alarms

### Purpose:

You can set handling method of an external sensor alarm.

**Note:** Sensor alarm is not supported by DS-7200HFI/HWI-SV series. DS-7600HI-ST only supports the sensor alarm of the IPC that connected to it.

### Steps:


1. Enter Alarm Settings interface and select an alarm input.

Menu> Configuration> Alarm

Alarm Status	Alarm Input	Alarm Output
Alarm Input List		
Alarm Input No.	Alarm Name	Alarm Type
Local-<1	1	N.C
Local-<2		N.O
Local-<3		N.O
Local-<4		N.O
Local-<5		N.O
Local-<6		N.O
Local-<7		N.O
Alarm Output List		
Alarm Output No.	Alarm Name	Dwell Time
Local->1		5s
Local->2		5s
Local->3		5s
Local->4		5s

Figure 8.8 Alarm Status Interface

2. Select **Alarm Input** tab to enter Alarm Input Settings interface, edit the name for the alarm input and set the handling method of the selected alarm input.

Check ☒ checkbox to enable the alarm input and click  to configure the alarm settings..


Alarm Status	Alarm Input	Alarm Output
Alarm Input No.	Local-<1	
Alarm Name	1	
Type	N.C	
Enable	<input checked="" type="checkbox"/>	
Settings		

Figure 8.9 Alarm Input Settings Interface

3. Select **Trigger Channel** tab and select one or more channels which will start to record/capture or become full-screen monitoring when an external alarm is input. Click **Apply** to save the settings.
4. Select **Arming Schedule** tab to set the channel's arming schedule.  
Choose one day of a week and up to eight time periods can be set within each day. Set up arming schedule of other days of a week. You can also use **Copy** to copy an arming schedule to other days. Click **Apply** to save the settings.

**Note:** Time periods shall not be repeated or overlapped.

Trigger Channel	Arming Schedule
Week	Mon
1	00:00-24:00
2	00:00-00:00
3	00:00-00:00
4	00:00-00:00
5	00:00-00:00
6	00:00-00:00
7	00:00-00:00
8	00:00-00:00

Figure 8. 10 Set Arming Schedule of Alarm Input

5. Select **Linkage Action** tab to set alarm response actions of the alarm input (please refer to *Chapter 8.6*).
6. If necessary, select **PTZ Linking** tab and set PTZ linkage of the alarm input.

Set PTZ linking parameters and click **Apply** to save the settings. Click **OK** to complete the settings of the alarm input.

**Note:** Please check whether the PTZ or speed dome supports PTZ linkage.

One alarm input can trigger presets, patrol or pattern of more than one channel. But presets, patrols and patterns are exclusive.

PTZ Linking	Analog 1
Call Preset	●
Preset	1
Call Patrol	●
Patrol	1
Call Pattern	●
Pattern	1

Figure 8. 11 Set PTZ Linking of Alarm Input

7. If you want to set alarm settings of another alarm input, repeat the above steps or just copy the above settings to it by clicking **Copy** in Alarm Input Settings interface.

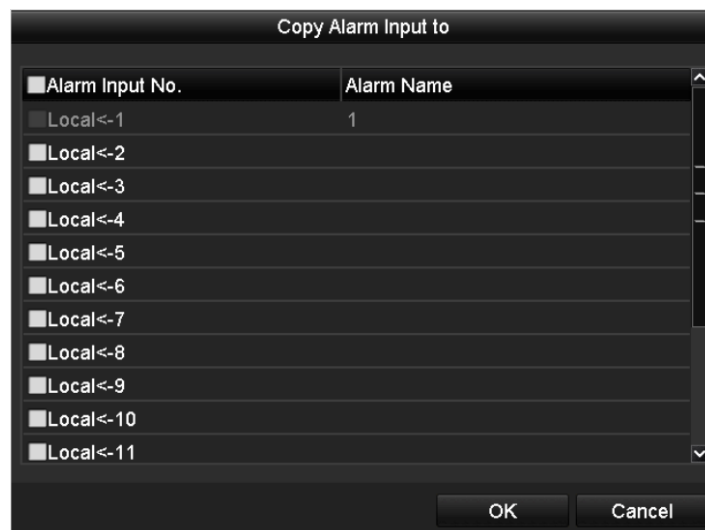


Figure 8. 12 Copy Settings of Alarm Input

---

## 8.3 Detecting Video Loss

### Purpose:

Detect video loss of a channel and take alarm response action(s).

### Steps:

1. Enter Video Loss interface and select a channel you want to detect.

Menu> Camera> Video Loss

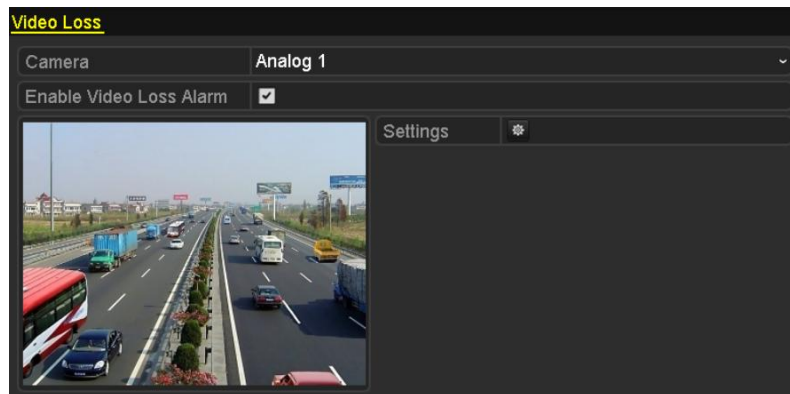



Figure 8.13 Video Loss Settings Interface

2. Set handling method of video loss.

Check ☒ checkbox to enable video loss alarm, and click  to set handling method of video loss.

3. Set arming schedule of the channel.

Select **Arming Schedule** tab to set the channel's arming schedule.

Choose one day of a week and up to eight time periods can be set within each day. Set up arming schedule of other days of a week. You can also use **Copy** to copy an arming schedule to other days. Click **Apply** to save the settings.

**Note:** Time periods shall not be repeated or overlapped.

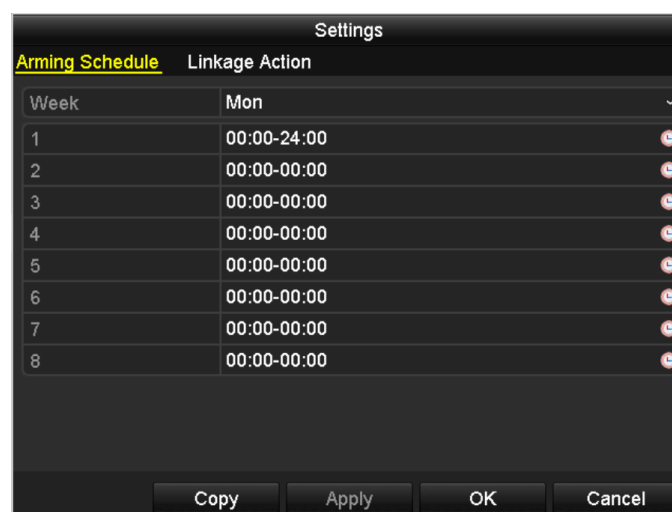


Figure 8.14 Set Arming Schedule of Video Loss

4. Select **Linkage Action** tab to set up alarm response action of video loss (please refer to *Chapter 8.6*).

Click **Apply** to save the settings and click **OK** to complete the video loss settings of the channel.

5. If you want to set video loss handling method for another channel, repeat the above steps or just click **Copy** in Video Loss interface to copy the above settings to it.

**Note:** Copying video loss settings to IP camera is not supported.



Figure 8. 15 Copy Settings of Video Loss

---

## 8.4 Detecting Video Tampering

### Purpose:

Trigger alarm and take alarm response action(s) when the lens is covered.

### Steps:

1. Enter Video Tampering interface and select a channel you want to detect video tampering.

Menu> Camera> Tamper-proof

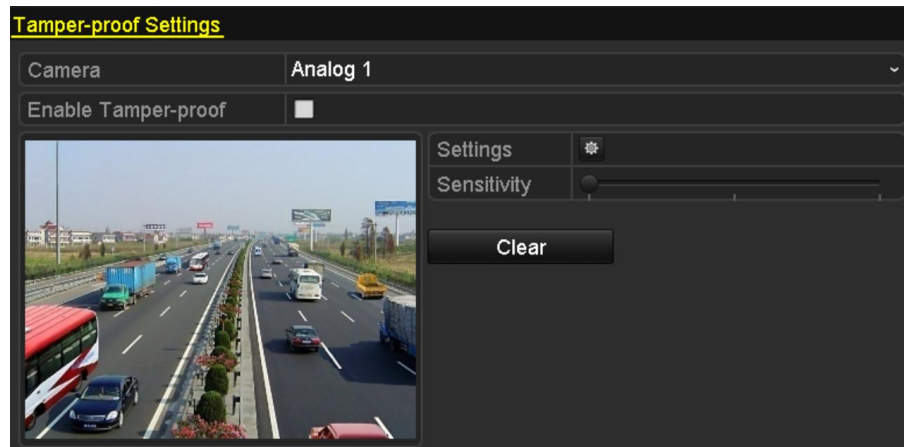



Figure 8.16 Tamper-proof Settings Interface

2. Set the video tampering handling method of the channel.

Check ☒ checkbox to enable detecting video tampering.

Drag the sensitivity bar and choose a proper sensitivity level. Use the mouse to draw an area you want to detect video tampering.

3. Click  to configure the video tampering settings. Set arming schedule and alarm response actions of the channel.

1) Click **Arming Schedule** tab to set the channel's arming schedule.

2) Choose one day of a week and up to eight time periods can be set within each day. Set up arming schedule of other days of a week. You can also use **Copy** to copy an arming schedule to other days. Click **Apply** to save the settings.

**Note:** Time periods shall not be repeated or overlapped.

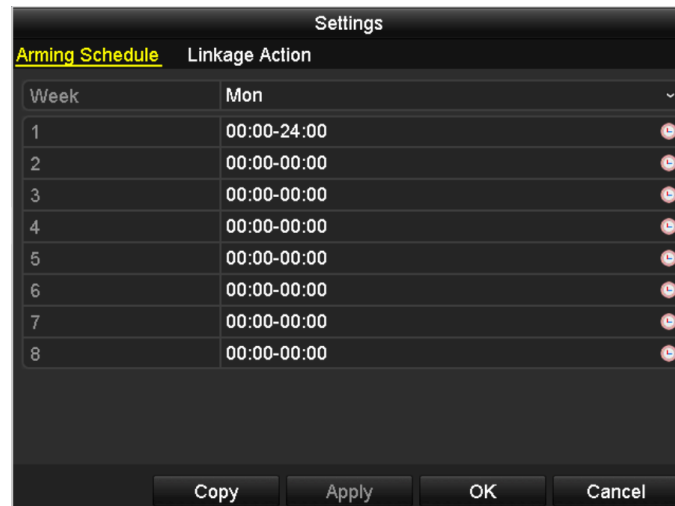


Figure 8. 17 Set Arming Schedule of Video Tampering

4. Select **Linkage Action** tab to set alarm response actions of video tampering alarm (please refer to *Chapter 8.6*).

Click **Apply** to save the settings and click **OK** to complete the video tampering settings of the channel.

5. If you want to set up video loss handling method for another channel, repeat step two and three, or just click **Copy** in Video Tamper interface to copy the above settings to it.

**Note:** Copying video tampering settings to IP camera is not supported.



Figure 8. 18 Copy Settings of Video Tampering



## 8.5 Handling Exceptions

### *Purpose:*

Exception settings refer to the handling method of various exceptions, e.g.

- **HDD Full:** The HDD is full.
- **HDD Error:** Writing HDD error, unformatted HDD, etc.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Duplicated IP address.
- **Illegal Login:** Incorrect user ID or password.
- **Video Signal Exception:** Unstable video signal.
- **Input / Output Video Standard Mismatch:** I/O video standards do not match.
- **Record / Capture Exception:** No space for saving recorded files or captured images.
- **Array Exception:** Abnormal virtual disks under array.

### *Notes:*

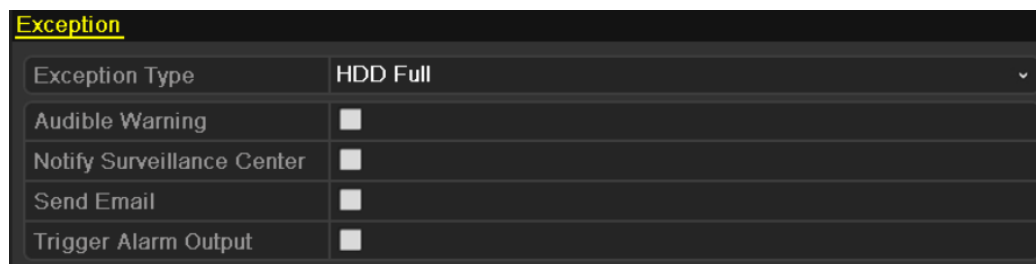
1. Input / Output Video Standard Mismatch and Video Signal Exception are not supported by IP camera of HDVR series.
2. Array Exception is only supported by DS-9100/9000HFI-RT series.

### *Steps:*

Enter Exceptions interface and handle various exceptions.

Menu> Configuration> Exceptions

Please refer to *Chapter 8.6* for detailed alarm response actions.



Exception Type	HDD Full
Audible Warning	<input type="checkbox"/>
Notify Surveillance Center	<input type="checkbox"/>
Send Email	<input type="checkbox"/>
Trigger Alarm Output	<input type="checkbox"/>

Figure 8. 19 Exceptions Settings Interface

---

## 8.6 Setting Alarm Response Actions

### *Purpose:*

Alarm response actions will be activated when an alarm or exception occurs, including Full Screen Monitoring, Audible Warning (buzzer), Notify Surveillance Center, Send Email, Upload Captured Pictures to FTP (this function is supported by DVR series only) and Trigger Alarm Output (not supported by the DS-7200 series).

### **Full Screen Monitoring**

When an alarm is triggered, the local monitor (HDMI, VGA or BNC monitor) display in full screen the video image from the alarming channel configured for full screen monitoring.

If alarms are triggered simultaneously in several channels, their full-screen images will be switched at an interval of 10 seconds (default dwell time). A different dwell time can be set by going to Menu > Configuration > Live View > Full Screen Monitoring Dwell Time.

Auto-switch will terminate once the alarm stops and you will be taken back to the Live View interface.

**Note:** You must select during “Trigger Channel” settings the channel(s) you want to make full screen monitoring.

### **Audible Warning**

Trigger an audible *beep* when an alarm is detected.

### **Notify Surveillance Center**

Sends an exception or alarm signal to remote alarm host when an event occurs. The alarm host refers to the PC installed with Remote Client.

**Note:** The alarm signal will be transmitted automatically at detection mode when remote alarm host is configured. Please refer to *Chapter 9.2.7* for details of alarm host configuration.

### **Send Email**

Send an email with alarm information to a user or users when an alarm is detected.

Please refer to *Chapter 9.2.11* for details of Email configuration.

### **Upload Captured Pictures to FTP**

Capture the image when an alarm is triggered and upload the picture to a FTP server.

**Note:** This function is supported by DVR series only. Please set FTP address and configure the remote FTP server first. Refer to *Chapter 9.2.4* for FTP settings.

### **Trigger Alarm Output (not supported by DS-7200 series)**

Trigger an alarm output when an alarm is triggered.

### *Steps:*

1. Enter Alarm Output interface.

Menu> Configuration> Alarm> Alarm Output

Select an alarm output and set alarm name and dwell time.

**Note:** If “Manually Clear” is selected in the dropdown list of Dwell Time, you can clear it only by going to Menu> Manual> Alarm and clicking **Clear All**.

Alarm Status	Alarm Input	Alarm Output
Alarm Output No.	Local->1	
Alarm Name		
Dwell Time	5s	
Settings		

Figure 8. 20 Alarm Output Settings Interface

- Set arming schedule of the alarm output.

Click to set the arming schedule of alarm output. Choose one day of a week and up to 8 time periods can be set within each day.

**Note:** Time periods shall not be repeated or overlapped.

Settings		
Arming Schedule		
Week	Mon	
1	00:00-24:00	
2	00:00-00:00	
3	00:00-00:00	
4	00:00-00:00	
5	00:00-00:00	
6	00:00-00:00	
7	00:00-00:00	
8	00:00-00:00	

Copy Apply OK Cancel

Figure 8. 21 Set Arming Schedule of Alarm Output

- Repeat the above steps to set up arming schedule of other days of a week. You can also click **Copy** to copy an arming schedule to other days. Click **OK** to complete the settings of the alarm output.
- You can also click **Copy** in Alarm Output interface to copy the above settings to another channel.

Copy Alarm Output to	
<input type="checkbox"/> Alarm Output No.	Alarm Name
<input type="checkbox"/> Local->1	
<input type="checkbox"/> Local->2	
<input type="checkbox"/> Local->3	
<input type="checkbox"/> Local->4	

OK Cancel

Figure 8. 22 Copy Settings of Alarm Output

## 8.7 Triggering or Clearing Alarm Output Manually

### *Purpose:*

Sensor alarm can be triggered or cleared manually. If “Manually Clear” is selected in the dropdown list of dwell time of an alarm output, the alarm can be cleared only by clicking **Clear** button in the following interface.

### *Steps:*

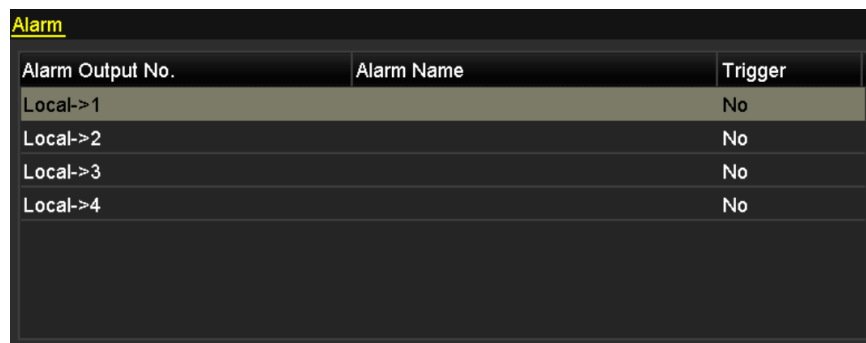
Select the alarm output you want to trigger or clear and make related operations.

Menu> Manual> Alarm

Click **Trigger** / **Clear** button if you want to trigger or clear an alarm output.

Click **Trigger All** button if you want to trigger all alarm outputs.

Click **Clear All** button if you want to clear all alarm output.



Alarm Output No.	Alarm Name	Trigger
Local->1		No
Local->2		No
Local->3		No
Local->4		No

Figure 8. 23 Clear or Trigger Alarm Output Manually

---

## **Chapter 9 Network Settings**

## 9.1 Configuring General Settings

### Purpose:

Network settings must be properly configured before you operate device over network.

### Steps:

1. Enter the Network Settings interface.

Menu > Configuration > Network

General	PPPOE	DDNS	NTP	Email	FTP	SNMP	UPnP	More Settings
Working Mode	Net Fault-tolerance							▼
Select NIC	bond0							▼
NIC Type	10M/100M/1000M Self-adaptive							▼
Enable DHCP	<input type="checkbox"/>							
IPv4 Address	172 .6 .21 .110							
IPv4 Subnet Mask	255 .255 .255 .0							
IPv4 Default Gateway	172 .6 .21 .1							
IPv6 Address 1	fe80::240:3dff:fe7e:9262/64							
IPv6 Address 2								
IPv6 Default Gateway								
MAC Address	00:40:3d:7e:92:62							
MTU(Bytes)	1500							
Preferred DNS Server								
Alternate DNS Server								
Main NIC	LAN1							▼

Figure 9. 1 Network Settings Interface for DS-9100/8100HFI-ST (HWI-ST) & DS-9100HFI-RT/XT

General	PPPOE	DDNS	NTP	Email	SNMP	UPnP	More Settings
Working Mode	Multi-address						▼
Select NIC	LAN1						▼
NIC Type	10M/100M/1000M Self-adaptive						▼
Enable DHCP	<input type="checkbox"/>						
IPv4 Address	172 .6 .21 .110						
IPv4 Subnet Mask	255 .255 .255 .0						
IPv4 Default Gateway	172 .6 .21 .1						
IPv6 Address 1	fe80::240:48ff:fe72:cc85/64						
IPv6 Address 2							
IPv6 Default Gateway							
MAC Address	00:40:48:72:cc:85						
MTU(Bytes)	1500						
Preferred DNS Server							
Alternate DNS Server							
Default Route	LAN1						▼

Figure 9. 2 Network Settings Interface for DS-9000HFI-ST/RT/XT (HWI-ST) & DS-8000HFI(HWI)-ST

General	PPPOE	DDNS	NTP	Email	FTP	SNMP	UPnP	More Settings
NIC Type	10M/100M/1000M Self-adaptive							▼
Enable DHCP	<input type="checkbox"/>							
IPv4 Address	172 .6 .21 .110							
IPv4 Subnet Mask	255 .255 .255 .0							
IPv4 Default Gateway	172 .6 .21 .1							
IPv6 Address 1	fe80::240:3dff:fe7e:9262/64							
IPv6 Address 2								
IPv6 Default Gateway								
MAC Address	00:40:3d:7e:92:62							
MTU(Bytes)	1500							
Preferred DNS Server								
Alternate DNS Server								

Figure 9. 3 Network Settings Interface for DS-7200HWI(HFI)-SV

General	PPPOE	DDNS	NTP	Email	SNMP	UPnP	More Settings
NIC Type	10M/100M/1000M Self-adaptive						
Enable DHCP	<input type="checkbox"/>						
IPv4 Address	172 . 6 . 21 . 110						
IPv4 Subnet Mask	255 . 255 . 255 . 0						
IPv4 Default Gateway	172 . 6 . 21 . 1						
IPv6 Address 1	fe80::240:48ff:fe7e:9262/64						
IPv6 Address 2							
IPv6 Default Gateway							
MAC Address	00:40:3d:7e:92:62						
MTU(Bytes)	1500						
Preferred DNS Server							
Alternate DNS Server							

Figure 9. 4 Network Settings Interface for DS-7600HI-ST

**Note:** In network settings interface: The FTP setting is supported by DVR series only. The Dual NIC (network interface card) is not supported by DS-7200HFI(HWI)-SV & 7600HI-ST series. We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

2. Select **General** tab.

3. In the **General Settings** interface:

For DS-7200HFI(HWI)-SV & 7600HI-ST series, you can configure the following settings: NIC Type, IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway, MTU and DNS Server.

For other series, you can configure the following settings: Working Mode, NIC Type, IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway, MTU and DNS Server.

If the DHCP server is available, you can check the checkbox of **DHCP** to automatically obtain an IP address and other network settings from that server.

**Note:** The valid value range of MTU is 500 ~ 9676.

4. After having configured the general settings, click **Apply** to save the settings.

**Working Mode:** There are two 10M/100M/1000M NIC cards provided by the device, and it allows the device to work in the Multi-address, Load Balance and Net Fault-tolerance modes.

**Multi-address Mode:** The parameters of the two NIC cards can be configured independently. You can select LAN1 or LAN2 in **Select NIC** field for parameter settings.

You can select one NIC card as default route. And when the system is connecting with the extranet the data will be forwarded through the default route.

Working Mode	Multi-address
Select NIC	LAN1
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 .6 .21 .110
IPv4 Subnet Mask	255 .255 .255 .0
IPv4 Default Gateway	172 .6 .21 .1
IPv6 Address 1	fe80::240:48ff:fe72:cc85/64
IPv6 Address 2	
IPv6 Default Gateway	
MAC Address	00:40:48:72:cc:85
MTU(Bytes)	1500
Preferred DNS Server	
Alternate DNS Server	
Default Route	LAN1

Figure 9. 5 Multi-address Working Mode

---

**Load Balance Mode:** By using the same IP address, and two NIC cards share the load of the total bandwidth, which enables the system to provide two Gigabit network capacity.

Working Mode	Load Balance
Select NIC	bond0
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 .6 .21 .110
IPv4 Subnet Mask	255 .255 .255 .0
IPv4 Default Gateway	172 .6 .21 .1
IPv6 Address 1	
IPv6 Address 2	
IPv6 Default Gateway	
MAC Address	00:40:48:72:cc:85
MTU(Bytes)	1500
Preferred DNS Server	
Alternate DNS Server	

Figure 9. 6 Load Balance Working Mode

---

**Net Fault-tolerance Mode:** The two NIC cards use the same IP address, and you can select the Main NIC to LAN1 or LAN2. By this way, in case of one NIC card failure, the device will automatically enable the other standby NIC card so as to ensure the normal running of the whole system.



Working Mode	Net Fault-tolerance
Select NIC	bond0
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 .6 .21 .110
IPv4 Subnet Mask	255 .255 .255 .0
IPv4 Default Gateway	172 .6 .21 .1
IPv6 Address 1	fe80::240:3dff:fe7e:9262/64
IPv6 Address 2	
IPv6 Default Gateway	
MAC Address	00:40:3d:7e:92:62
MTU(Bytes)	1500
Preferred DNS Server	
Alternate DNS Server	
Main NIC	LAN1

Figure 9. 7 Net Fault-tolerance Working Mode

---

## 9.2 Configuring Advanced Settings

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### 9.2.1 Configuring PPPoE Settings

**Purpose:**

Your device also allows access by Point-to-Point Protocol over Ethernet (PPPoE).

**Steps:**

1. Enter the **Network Settings** interface.  
Menu > Configuration > Network
2. Select the **PPPoE** tab to enter the PPPoE Settings interface.

Enable PPPOE	<input type="checkbox"/>
User Name	
Password	
Confirm	

Figure 9. 8 PPPoE Settings Interface

3. Check ☒ checkbox to enable PPPoE.
4. Enter **User Name**, **Password**, and **Confirm Password** for PPPoE access.

**Note:** The User Name and Password should be assigned by your ISP.

Enable PPPOE	<input checked="" type="checkbox"/>
User Name	test
Password	*****
Confirm	*****

Figure 9. 9 PPPoE Settings Interface

5. Click **Apply** to save and exit the interface.
6. After successful settings, the system asks you to reboot the device to activate the new settings, and the PPPoE dial-up is automatically connected after reboot.

You can go to Menu > Maintenance > System Info > Network interface to view the status of PPPoE connection. Please refer to *Chapter 13.1.5 Viewing Network Information* for PPPoE status.

### 9.2.2 Configuring DDNS Settings

**Purpose:**

If your device is set to use PPPoE as its default network connection, you may set Dynamic DNS (DDNS) to be used for network access.

Prior registration with your ISP is required before configuring the system to use DDNS.

**Steps:**

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **DDNS** tab to enter the DDNS Settings interface.

Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	IPServer ▾
Server Address	
Device Domain Name	
User Name	
Password	
Confirm	

Figure 9. 10 DDNS Settings Interface

---

3. Check ☒ checkbox to enable DDNS.
4. Select **DDNS Type**. Five different DDNS types are selectable: IPSEver, DynDNS, PeanutHull, NO-IP and HiDDNS.

- **IPSEver:** Enter **Server Address** for IPSEver, and other fields are read only.

**Note:** The **Server Address** should be the IP address of the PC that runs IPSEver.

Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	IPServer ▾
Server Address	172.5.22.122
Device Domain Name	
User Name	
Password	
Confirm	

Figure 9. 11 IPSEver Settings Interface

---

- **DynDNS:**

- 1) Enter **Server Address** for DynDNS (e.g. members.dyndns.org).
- 2) In the **Device Domain Name** text field, enter the domain obtained from the DynDNS website.
- 3) Enter the **User Name** and **Password** registered in the DynDNS website.

Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	DynDNS ▾
Server Address	members.dyndns.org
Device Domain Name	123.dyndns.com
User Name	test
Password	*****
Confirm	*****

Figure 9. 12 DynDNS Settings Interface

---

- **PeanutHull:** Enter **User Name** and **Password** obtained from the PeanutHull website, and other fields are read only.

Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	PeanutHull
Server Address	
Device Domain Name	
User Name	123.gicp.net
Password	*****
Confirm	*****

Figure 9. 13 Peanut Hull Settings Interface

---

- **NO-IP:**

Enter the account information in the corresponding fields.

- 1) Enter **Server Address** for NO-IP.
- 2) In the **Device Domain Name** text field, enter the domain obtained from the NO-IP website (www.no-ip.com).
- 3) Enter the **User Name** and **Password** registered in the NO-IP website.

Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	NO-IP
Server Address	no-ip.org
Device Domain Name	123.no-ip.org
User Name	test
Password	*****
Confirm	*****

Figure 9. 14 NO-IP Settings Interface

- 
- **HiDDNS:** You need to enter the **Server Address** and **Device Domain Name** for HiDDNS, and other fields are read only.

- 1) Edit the **Server Address** of the HiDDNS server. By default, [www.hik-online.com](http://www.hik-online.com) will be automatically available in the **Server Address** field when **HiDDNS** is selected.
- 2) Enter the **Device Domain Name**. You can register the device domain name in the HiDDNS server first and then enter the name to the **Device Domain Name** in the device; you can also enter the domain name directly on the device to create a new one.

**Note:** If a new device domain name is defined in the device, it will replace the old one registered on the server.

Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	HiDDNS
Server Address	www.hik-online.com
Device Domain Name	intelligent
User Name	
Password	
Confirm	

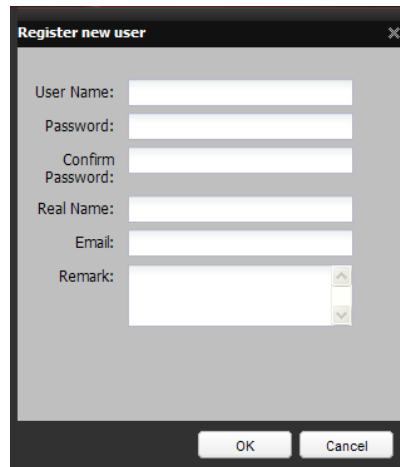
Figure 9. 15 HiDDNS Settings Interface

---

**Register the device on the HiDDNS server.**


- 1) Go to the HiDDNS website: [www.hik-online.com](http://www.hik-online.com).

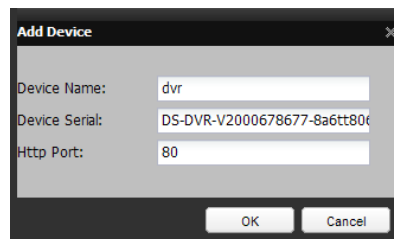
- 2) Click [Register new user](#) to register an account if you do not have one and use the account to log in.



The 'Register new user' dialog box contains the following fields: User Name, Password, Confirm Password, Real Name, Email, and Remark. At the bottom are 'OK' and 'Cancel' buttons.

Figure 9. 16 Register an Account

- 3) In the Device Management interface, click  to register the device.



The 'Add Device' dialog box contains the following fields: Device Name (with value 'dvr'), Device Serial (with value 'DS-DVR-V2000678677-8a6tt80c'), and Http Port (with value '80'). At the bottom are 'OK' and 'Cancel' buttons.

Figure 9. 17 Register the Device

**Note:** The device name can only contain the lower-case English letter, numeric and '-'; and it must start with the lower-case English letter and cannot end with '-'.

#### Access the Device via Web Browser or Client Software

After having successfully registered the device on the HiDDNS server, you can access your device via web browser or Client Software with the **Device Domain Name (Device Name)**.


##### Task 1: Access the Device via Web Browser

Open a web browser, and enter <http://www.hik-online.com/alias> in the address bar. Alias refers to the **Device Domain Name** on the device or the **Device Name** on the HiDDNS server.

**Example:** <http://www.hik-online.com/dvr>

**Note:** If you mapped the HTTP port on your router and changed it to port No. except 80, you have to enter <http://www.hik-online.com/alias:HTTP port> in the address bar to access the device. You can refer to *Chapter 9.2.6* for the mapped HTTP port No.

##### Task 2: Access the Devices via iVMS-4200

For iVMS-4200, in the Add Device window, select  **HiDDNS** and then edit the device information.

**Nickname:** Edit a name for the device as you want.


**Server Address:** [www.hik-online.com](http://www.hik-online.com)

**Device Domain Name:** It refers to the **Device Domain Name** on the device or the **Device Name** on the HiDDNS server you created.

**User Name:** Enter the user name of the device. By default it is admin.

**Password:** Enter the password of the device. By default it is 12345.

Figure 9. 18 Access Device via iVMS4200

5. Click  to save and exit the interface.

## 9.2.3 Configuring NTP Server Settings

### *Purpose:*


A Network Time Protocol (NTP) Server can be configured on your device to ensure the accuracy of system date/time.

### *Steps:*

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **NTP** tab to enter the NTP Settings interface.

Enable NTP	<input checked="" type="checkbox"/>
Interval (min)	60
NTP Server	210.72.145.44
NTP Port	123

Figure 9. 19 NTP Settings Interface

3. Check ☒ checkbox to enable NTP.
4. Configure the following NTP settings:
  - **Interval:** Time interval between the two synchronizing actions with NTP server. The unit is minute.
  - **NTP Server:** IP address of NTP server.
  - **NTP Port:** Port of NTP server.
5. Click  to save and exit the interface.

**Note:** The time synchronization interval can be set from 1 to 10080min, and the default value is 60min. If the device is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the device is setup in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

## 9.2.4 Configuring FTP Server Settings

**Note:** FTP configuration is supported by DVR series only.

**Purpose:**

The FTP (File Transfer Protocol) can be configured on your device to realize dual-directional transmission of control files over Internet. And the captured pictures of device can be uploaded to FTP server as well.

**Steps:**

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **FTP** tab to enter the FTP Settings interface.

FTP Server	Preferred FTP Server
Enable FTP	<input type="checkbox"/>
FTP Protocol	FTP
Server Address	
FTP Port	21
User Name	
Password	
Directory	Use Root Directory
Parent Directory	
Parent Directory Name	
Secondary Directory	
Secondary Directory Name	

Figure 9. 20 FTP Settings Interface

3. Select a FTP server. Preferred FTP Server and Alternate FTP Server are selectable.
4. Check ☒ checkbox to enable the FTP server.  
**Note:** When both two FTP servers are enabled and configured properly, once the preferred FTP server fails, the alternate FTP server will be used until the preferred FTP server resumes work.
5. Configure the FTP settings for preferred and alternate FTP server, including FTP protocol, server address, port, user name, password and the directory.

FTP Server	Preferred FTP Server
Enable FTP	<input checked="" type="checkbox"/>
FTP Protocol	FTP
Server Address	172.5.10.220
FTP Port	21
User Name	test
Password	*****
Directory	Use Parent Directory
Parent Directory	Use Device Name
Parent Directory Name	Embedded Net DVR
Secondary Directory	
Secondary Directory Name	


Figure 9. 21 Configure FTP Settings

**FTP Protocol:** Select the protocol for the FTP server. FTP and SFTP (Secure File Transfer Protocol) are available. For SFTP, the remote FTP server should support the SFTP protocol. It is a more secure way for file transmission by adopting the secure encryption method. However, due to the secure encryption method, the speed of the file transmission with SFTP protocol is much lower than

that with FTP protocol.

**Directory:** In the **Directory** field, you can select the Root directory, Parent directory and secondary directory. When the Parent Directory is selected, you have the option to use the Device Name, Device No. or Device IP for the name of the directory, or you can customize the directory name; and the when the Secondary Directory is selected, you can use the Camera Name or Camera No. as the name of the directory, or you can customize the directory name.

**Note:** If you want to modify the Device Name, Device No., Device IP or Camera Name, please enter the corresponding interface to modify.

6. Click  to save and exit the interface.

**Note:** Please make sure the remote FTP server has been started up before setting the FTP parameters.

## 9.2.5 Configuring SNMP Settings

### Purpose:

You can use SNMP protocol to get device status and parameters related information.

### Steps:

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **SNMP** tab to enter the SNMP Settings interface.


Enable SNMP	<input type="checkbox"/>
SNMP Version	V2
SNMP Port	161
Read Community	public
Write Community	private
Trap Address	
Trap Port	162

Figure 9.22 SNMP Settings Interface

3. Check ☒ checkbox to enable SNMP.
4. Configure the SNMP settings.

Enable SNMP	<input checked="" type="checkbox"/>
SNMP Version	V2
SNMP Port	161
Read Community	public
Write Community	private
Trap Address	
Trap Port	162

Figure 9.23 Configure SNMP Settings

5. Click  to save and exit the interface.

**Note:** Before setting the SNMP, please download the SNMP software and manage to receive the device information via SNMP port. By setting the Trap Address, the device is allowed to send the alarm event and exception message to the surveillance center.



## 9.2.6 Configuring UPnP™ Settings

### Purpose:

Universal Plug and Play (UPnP™) can permits the device seamlessly discover the presence of other network devices on the network and establish functional network services for data sharing, communications, etc. You can use the UPnP™ function to enable the fast connection of the device to the WAN via a router without port mapping.

### Before you start:

If you want to enable the UPnP™ function of the device, you must enable the UPnP™ function of the router to which your device is connected. When the network working mode of the device is set as multi-address, the Default Route of the device should be in the same network segment as that of the LAN IP address of the router.

### Steps:

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **UPnP** tab to enter the UPnP™ interface.

Enable UPnP					
Mapping Type		Manual			
Port Type	Edit	External Port	Mapping IP Address	Port	Status
Server Port		8000	0.0.0.0	8000	Inactive
HTTP Port		80	0.0.0.0	80	Inactive
RTSP Port		554	0.0.0.0	554	Inactive
HTTPS Port		443	0.0.0.0	443	Inactive

**Refresh**

Figure 9. 24 UPnP™ Settings Interface

3. Check ☒ checkbox to enable UPnP™.
4. Select the Mapped Type as Manual or Auto in the drop-down list.

### Task1: Auto

If you select Auto, the Port Mapping items are read-only, and the external ports are set by the router automatically.

### Steps:


- 1) Click **Apply** to save the settings.
- 2) You can click **Refresh** to get the latest status of the port mapping.

Enable UPnP		<input checked="" type="checkbox"/>			
Mapping Type		Auto			
Port Type	Edit	External Port	Mapping IP Address	Port	Status
Server Port		43728	172.6.21.31	8000	Active
HTTP Port		31397	172.6.21.31	80	Active
RTSP Port		59826	172.6.21.31	554	Active
HTTPS Port		31231	172.6.21.31	443	Active


**Refresh**

Figure 9. 25 UPnP™ Settings Finished-Auto

### Task2: Manual

If you select Manual as the mapping type, you can edit the external port on your demand by clicking  to activate the External Port Settings dialog box.

**Steps:**

- 1) Click  to activate the External Port Settings dialog box. Configure the external port No. for server port, http port, RTSP port and https port respectively.

**Notes:**

- You can use the default port No., or change it according to actual requirements.
- External Port indicates the port No. for port mapping in the router.
- The value of the port No. should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.

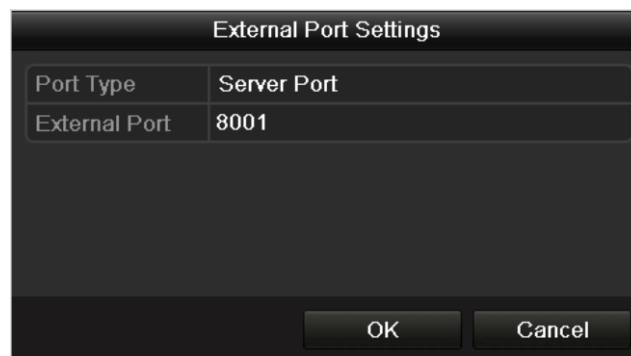




Figure 9.26 External Port Settings Dialog Box

- 2) Click  to save the settings.
- 3) You can click  to get the latest status of the port mapping.

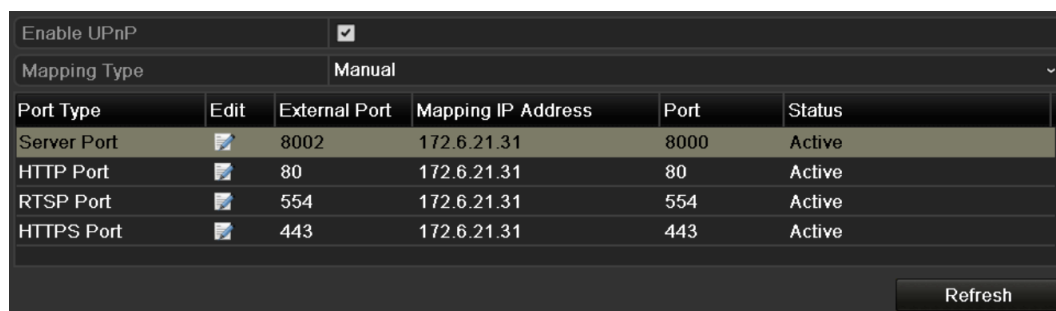


Figure 9.27 UPnP™ Settings Finished-Manual

## 9.2.7 Configuring Remote Alarm Host Settings

**Purpose:**

With a remote alarm host configured, the device will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the CMS (Client Management System) software installed.

**Steps:**

1. Enter the Network Settings interface.  
Menu > Configuration > Network

2. Select the **More Settings** tab to enter the More Settings interface.

Alarm Host IP	
Alarm Host Port	0
Server Port	8000
HTTP Port	80
Multicast IP	
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9.28 More Settings Interface

3. Enter **Alarm Host IP** and **Alarm Host Port** in the text fields.

The **Alarm Host IP** refers to the IP address of the remote PC on which the CMS (Client Management System) software (e.g., iVMS-4200) is installed, and the **Alarm Host Port** must be the same as the alarm monitoring port configured in the software.

Alarm Host IP	172.6.21.58
Alarm Host Port	7200
Server Port	8000
HTTP Port	80
Multicast IP	
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9.29 Configure Alarm Host

4. Click **Apply** to save and exit the interface.

## 9.2.8 Configuring Multicast Settings

### *Purpose:*

The multicast can be configured to realize live view for more than 128 cameras through network.


A multicast address spans the Class-D IP range of 224.0.0.0 to 239.255.255.255. It is recommended to use the IP address ranging from 239.252.0.0 to 239.255.255.255.

### *Steps:*

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **More Settings** tab to enter the More Settings interface.
3. Set **Multicast IP**, as shown in figure below. When adding a device to the CMS (Client Management System) software, the multicast address must be the same as the device's multicast IP.

Alarm Host IP	172.6.21.58
Alarm Host Port	7200
Server Port	8000
HTTP Port	80
Multicast IP	239.255.235.112
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9.30 Configure Multicast

- 
4. Click  to save and exit the interface.

## 9.2.9 Configuring RTSP Settings

### *Purpose:*


The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

### *Steps:*

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **More Settings** tab to enter the More Settings menu.

Alarm Host IP	172.6.21.58
Alarm Host Port	7200
Server Port	8000
HTTP Port	80
Multicast IP	239.255.235.112
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9.31 RTSP Settings Interface

- 
3. Enter the RTSP port in the text field of **RTSP Service Port**. The default RTSP port is 554, and you can change it according to different requirements.
  4. Click  to save and exit the menu.

## 9.2.10 Configuring Server and HTTP Ports Settings

### *Purpose:*

You can change the server and HTTP ports in the Network Settings menu. The default server port is 8000 and the default HTTP port is 80.

### *Steps:*

1. Enter the Network Settings interface.  
Menu > Configuration > Network

2. Select the **More Settings** tab to enter the More Settings interface.
3. Enter new **Server Port** and **HTTP Port**.

Alarm Host IP	
Alarm Host Port	
Server Port	8000
HTTP Port	80
Multicast IP	
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9. 32 HTTP &amp; Server Port Settings Interface

4. Enter the **Server Port** and **HTTP Port** in the text fields. The default Server Port is 8000 and the HTTP Port is 80, and you can change them according to different requirements.
5. Click **Apply** to save and exit the interface.

**Note:** The Server Port should be set to the range of 2000-65535 and it is used for remote client software access. The HTTP port is used for remote IE access.

## 9.2.11 Configuring HTTPS Settings

### **Purpose:**

HTTPS (Hyper Text Transfer Protocol Secure) ensures the data transferred is encrypted using Secure Socket Layer (SSL) or Transport Layer Security (TLS). HTTPS provides authentication of the web site and associated web server that one is communicating with and create a secure channel over an insecure network.

HTTPS URLs begin with *https://* and use port 443 by default. You can modify the port No. as desired.

### **Example:**

If you set the port No. as 445 and the IP address of the device is 192.0.0.64, you can access the device by inputting *https://192.0.0.64:445* in the web browser.

### **Steps:**


1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **More Settings** tab to enter the More Settings interface.
3. Check ☒ checkbox to enable the HTTPS.

Alarm Host IP	
Alarm Host Port	0
Server Port	8000
HTTP Port	80
Multicast IP	
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9. 33 HTTPS Settings

4. Enter the **HTTPS Port** in the text fields. The default HTTPS Port is 443, and you can change it according

to different requirements.

5. Click  to save and exit the interface.

**Note:** The HTTPS Port should be set to the range of 1-65535.

## 9.2.12 Configuring High-speed Download Settings

### *Purpose:*

You can enable the High-speed Download function to widen the outgoing bandwidth of the device. In this way you can speed up the download of record files through web browser or CMS software.


**Note:** If you enable the high-speed download function, the local menu operation will be affected. It is recommended to disable this function after finishing the remote download of record files.

### *Steps:*

1. Enter the Network Settings interface.  
Menu > Configuration > Network
2. Select the **More Settings** tab to enter the More Settings interface.

Alarm Host IP	
Alarm Host Port	0
Server Port	8000
HTTP Port	80
Multicast IP	
RTSP Port	554
Enable HTTPS	<input checked="" type="checkbox"/>
HTTPS Port	443
Enable High-speed Download	<input type="checkbox"/>

Figure 9. 34 High-speed Download Settings

3. Check ☒ checkbox to enable the High-speed Download and the following message box pops up. Click  to confirm the settings

**Note:** If you enable the high-speed download function, the local menu operation will be affected. It is recommended to disable this function after finishing the remote download of record files.

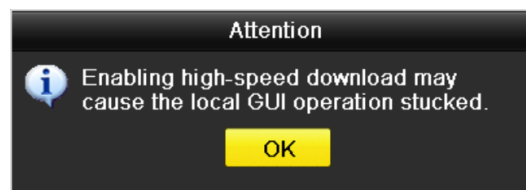


Figure 9. 35 Message Box for High-speed Download

4. Click  to save the settings.

## 9.2.13 Configuring Email Settings

### *Purpose:*

The system can be configured to send an Email notification to all designated users if an alarm event is detected, a motion detection event is detected, etc.

**Before you start:**

The device must be connected to a local area network (LAN) that maintains an SMTP mail server. The network must also be connected to either an intranet or the Internet depending on the location of the email accounts to which you want to send notification.

**Steps:**

1. Enter the Network Settings interface.


Menu > Configuration > Network

2. Set the IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway and the Preferred DNS Server in the Network Settings interface.

Working Mode	Net Fault-tolerance ▾
Select NIC	bond0 ▾
NIC Type	10M/100M/1000M Self-adaptive ▾
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 .6 .21 .110
IPv4 Subnet Mask	255 .255 .255 .0
IPv4 Default Gateway	172 .6 .21 .1
IPv6 Address 1	fe80::240:3dff:fe7e:9262/64
IPv6 Address 2	
IPv6 Default Gateway	
MAC Address	00:40:3d:7e:92:62
MTU(Bytes)	1500
Preferred DNS Server	192.0.0.200
Alternate DNS Server	
Main NIC	LAN1 ▾

Figure 9. 36 Network Settings Interface

---

3. Click  to save the settings.
4. Select the **Email** tab to enter the Email Settings interface.

Enable Server Authentica...	<input type="checkbox"/>
User Name	
Password	
SMTP Server	
SMTP Port	25
Enable SSL	<input type="checkbox"/>
Sender	
Sender's Address	
Select Receivers	Receiver 1 ▾
Receiver	
Receiver's Address	
Enable Attached Picture	<input type="checkbox"/>
Interval	2s

Figure 9. 37 Email Settings Interface

---

5. Configure the following Email settings:

**Enable Server Authentication (optional):** If your mail server requires authentication, check this checkbox to use authentication to log in to this server and enter the login User Name and Password.

**User Name:** The user account of sender's Email for SMTP server authentication.

**Password:** The password of sender's Email for SMTP server authentication.

**SMTP Server:** The SMTP Server IP address or host name (e.g., smtp.263xmail.com).

**SMTP Port:** The SMTP port. The default TCP/IP port used for SMTP is 25.

**Enable SSL (optional):** Check the checkbox to enable SSL if required by the SMTP server.

**Sender:** The name of sender.

**Sender's Address:** The Email address of sender.

**Select Receivers:** Select the receiver. Up to 3 receivers can be configured.

**Receiver:** The name of user to be notified.

**Receiver's Address:** The Email address of user to be notified.

**Enable Attached Pictures:** Check the checkbox of **Enable Attached Picture** if you want to send email with attached alarm images.

**Interval:** The interval refers to the time between two actions of sending attached pictures.

Enable Server Authentica...	<input type="checkbox"/>
User Name	
Password	
SMTP Server	126.smtp.com
SMTP Port	25
Enable SSL	<input checked="" type="checkbox"/>
Sender	test01
Sender's Address	test01@126.com
Select Receivers	Receiver 1 ▾
Receiver	test02
Receiver's Address	test02@163.com
Enable Attached Picture	<input checked="" type="checkbox"/>
Interval	2s ▾

Figure 9.38 Configure Email Settings

- 
- Click **Apply** to save the Email settings.
  - You can click **Test** to test whether your Email settings work. The corresponding Attention message box will pop up.

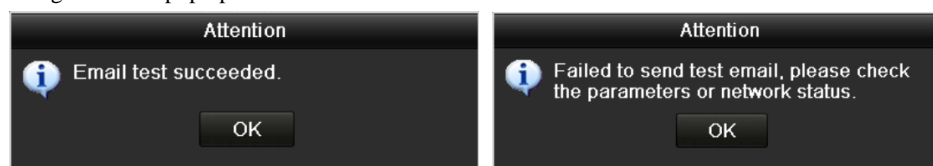


Figure 9.39 Email Testing Attention

---



## 9.3 Checking Network Traffic

### *Purpose:*

You can check the network traffic to obtain real-time information of device such as linking status, MTU, sending/receiving rate, etc.

### *Steps:*

1. Enter the Network Traffic interface.

Menu > Maintenance > Net Detect

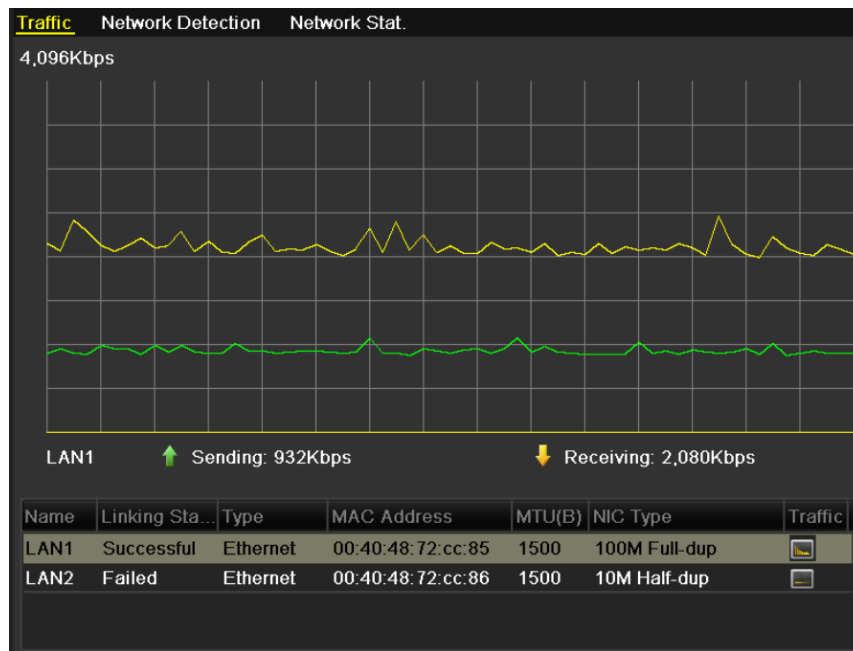


Figure 9. 40 Network Traffic Interface

2. You can view the sending rate and receiving rate information on the interface. The traffic data is refreshed every 1 second.

## 9.4 Network Detection

### Purpose:

You can obtain network connecting status of device through the network detection function, including network delay, packet loss, etc.

### 9.4.1 Testing Network Delay and Packet Loss

#### Steps:

1. Enter the Network Detection interface.  
Menu > Maintenance > Net Detect
2. Click the **Network Detection** tab to enter the Network Detection menu.

Figure 9. 41 Network Detection Interface for DS-7200HFI(HWI)-SV & 7600HI-ST Series

Figure 9. 42 Network Detection Interface for Other Series

**Note:** Dual NIC is not supported by DS-7200HFI(HWI)-SV & 7600HI-ST series. We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

3. Select a NIC to test network delay and packet loss.
4. Enter the destination address in the text field of **Destination Address**.
5. Click **Test** to start testing network delay and packet loss. The testing result pops up on the window. If the testing is failed, the error message box will pop up as well.

Figure 9. 43 Testing Result of Network Delay and Packet Loss

## 9.4.2 Exporting Network Packet

### Purpose:

By connecting the device to network, the captured network data packet can be exported to USB-flash disk, SATA/eSATA DVD-R/W and other local backup devices.

**Note:** Dual NIC is not supported by DS-7200HFI(HWI)-SV & 7600HI-ST series. We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### Steps:

1. Enter the Network Traffic interface.  
Menu > Maintenance > Net Detect
2. Click the **Network Detection** tab to enter the Network Detection interface.
3. Select the backup device from the dropdown list of Device Name.

**Note:** Click **Refresh** if the connected local backup device cannot be displayed. When it fails to detect the backup device, please check whether it is compatible with the device. You can format the backup device if the format is incorrect.

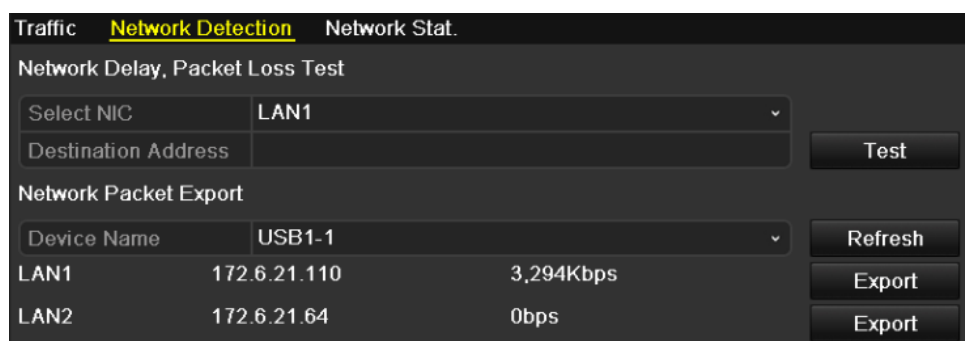


Figure 9.44 Export Network Packet

4. Click **Export** to start exporting.
5. After the exporting is complete, click **OK** to finish the packet export, as shown in Figure 9.41.

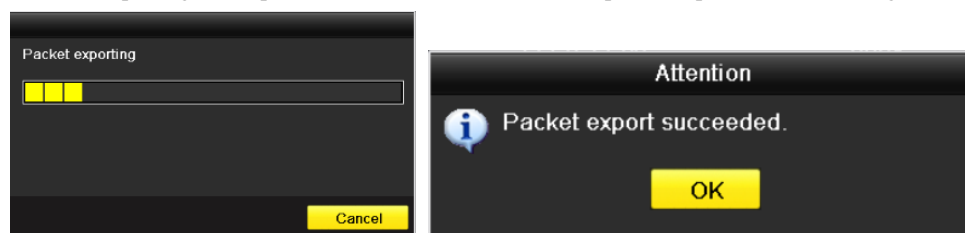


Figure 9.45 Packet Export Attention

**Note:** Up to 1M data can be exported each time.

### 9.4.3 Checking Network Status

**Purpose:**

You can also check the network status and quick set the network parameters in this interface.

**Note:** Dual NIC is not supported by DS-7200HFI(HWI)-SV & 7600HI-ST series. We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

**Steps:**

1. Enter the Network Traffic interface.  
Menu > Maintenance > Net Detect
2. Click the **Network Detection** tab to enter the Network Detection interface.
3. Click **Status** to get the network status.

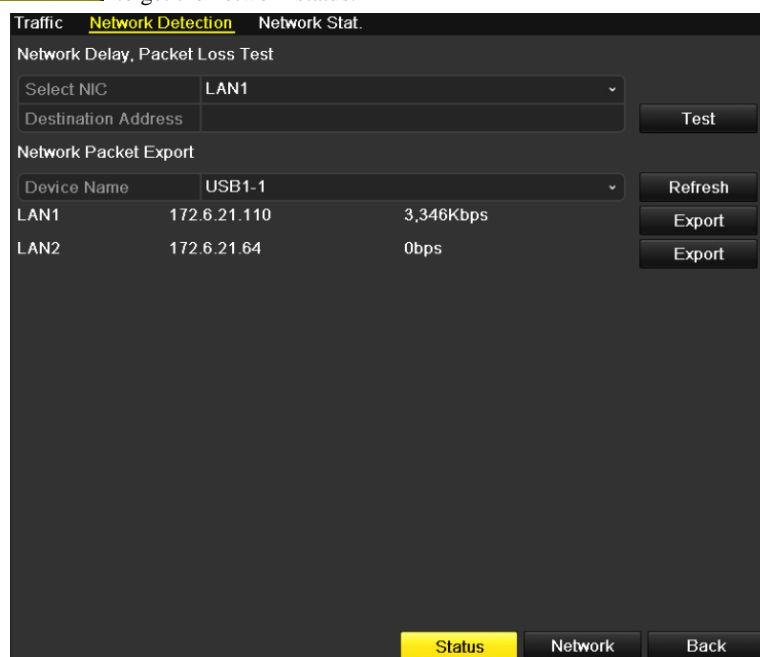


Figure 9. 46 Checking Network Status

If the network is normal the following message box pops out.

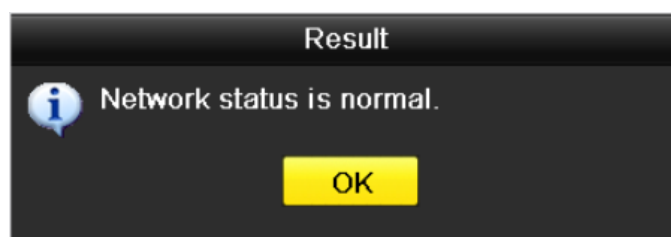
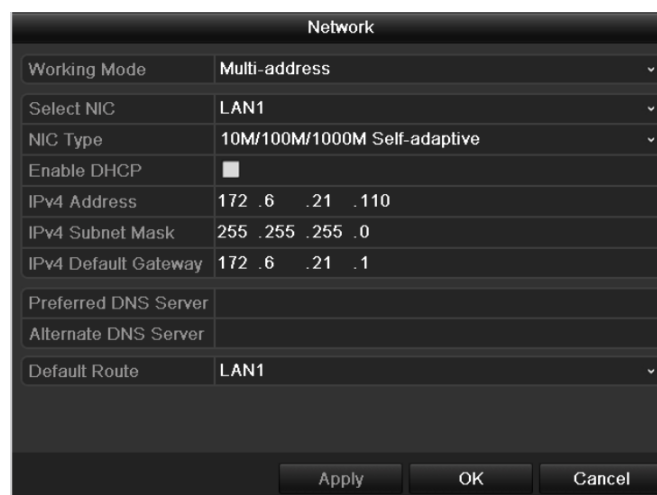


Figure 9. 47 Network Status Checking Result

If the message box pops out with other information instead of this one, you can click **Network** to show the quick setting interface of the network parameters.



Network	
Working Mode	Multi-address
Select NIC	LAN1
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 . 6 . 21 . 110
IPv4 Subnet Mask	255 . 255 . 255 . 0
IPv4 Default Gateway	172 . 6 . 21 . 1
Preferred DNS Server	
Alternate DNS Server	
Default Route	LAN1
<div> <div>Apply</div> <div>OK</div> <div>Cancel</div> </div>	

Figure 9. 48 Network Parameters Configuration

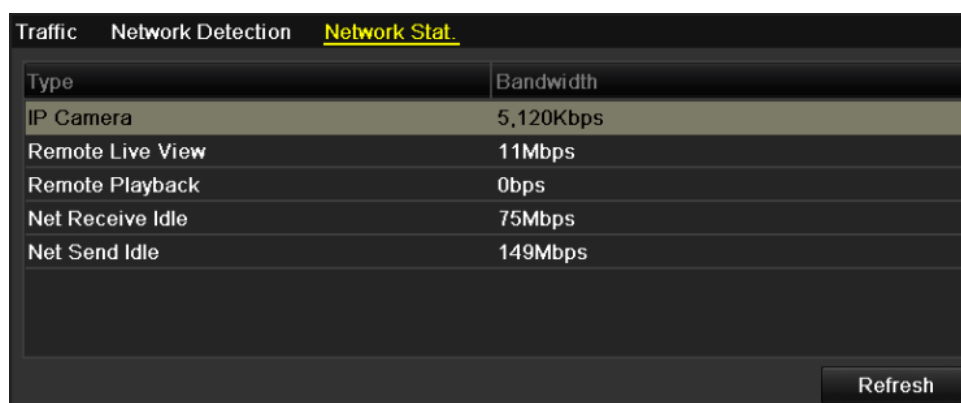
## 9.4.4 Checking Network Statistics

### Purpose:

You can check the network statistics to obtain the real-time information of the device.

### Steps:

1. Enter the Network Statistics interface.  
Menu > Maintenance> Net Detect
2. Click the **Network Stat.** tab to enter the Network Statistics interface.



Type	Bandwidth
IP Camera	5,120Kbps
Remote Live View	11Mbps
Remote Playback	0bps
Net Receive Idle	75Mbps
Net Send Idle	149Mbps

Refresh

Figure 9. 49 Network Stat. Interface

3. View the bandwidth of IP Camera, bandwidth of Remote Live View, bandwidth of Remote Playback, bandwidth of Net Receive Idle and bandwidth of Net Send Idle.

### Notes:

- 1) The bandwidth of IP Camera is only displayed in HDVR series.
  - 2) And the value of the bandwidth is subject to the actual model.
4. Click 

Refresh

 to get the latest bandwidth statistics.

## **Chapter 10 RAID Configuration**

**Notes:** This chapter is available for DS-9100/9000HFI-RT series only. For the configuration for alarm response actions of array exception, please refer to *Chapter 8.5* and *Chapter 8.6*.

## 10.1 Configuring Array and Virtual Disk

### **Purpose:**

RAID (redundant array of independent disks) is a storage technology that combines multiple disk drive components into a logical unit. A RAID setup stores data over multiple hard disk drives to provide enough redundancy so that data can be recovered if one disk fails. Data is distributed across the drives in one of several ways called "RAID levels", depending on what level of redundancy and performance is required. The DS-9000/9100HFI-RT is capable of realizing RAID settings, supporting RAID 0, RAID 1, RAID 5 and RAID 10.

### **Before you start:**

Please install the HDD(s) properly and it is recommended to use the same enterprise-level HDDs (including model and capacity) for array creation and configuration so as to maintain reliable and stable running of the disks.

### **Introduction:**

The DS-9000/9100HFI-RT series can store the data (such as record, picture, log information) in the HDD only after you have created the virtual disk or you have configured network HDD (refer to *Chapter 11.2 Managing Network HDD*). Our device provides two ways for creating the virtual disk, including one-touch configuration and manual configuration. The following flow chart shows the process of creating virtual disk.

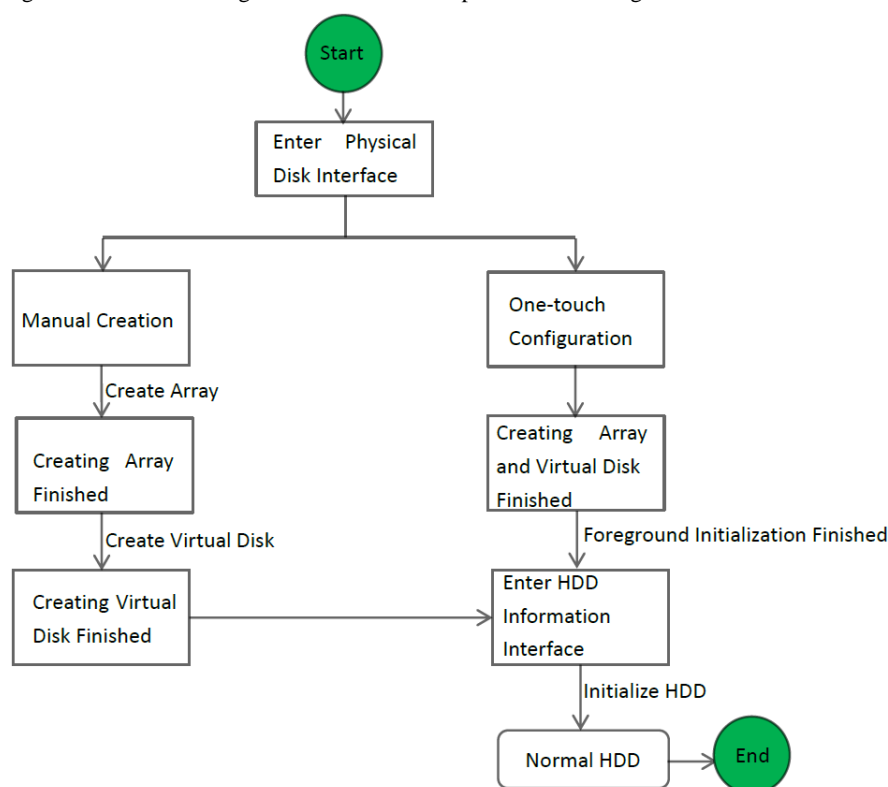


Figure 10.1 RAID Working Flow

## 10.1.1 One-touch Configuration

### Purpose:

Through one-touch configuration, you can quickly create the disk array and virtual disk. By default, the array type to be created is RAID 5.

### Steps:

1. Enter the Physical Disk Settings interface.

Menu > HDD > RAID > Physical Disk

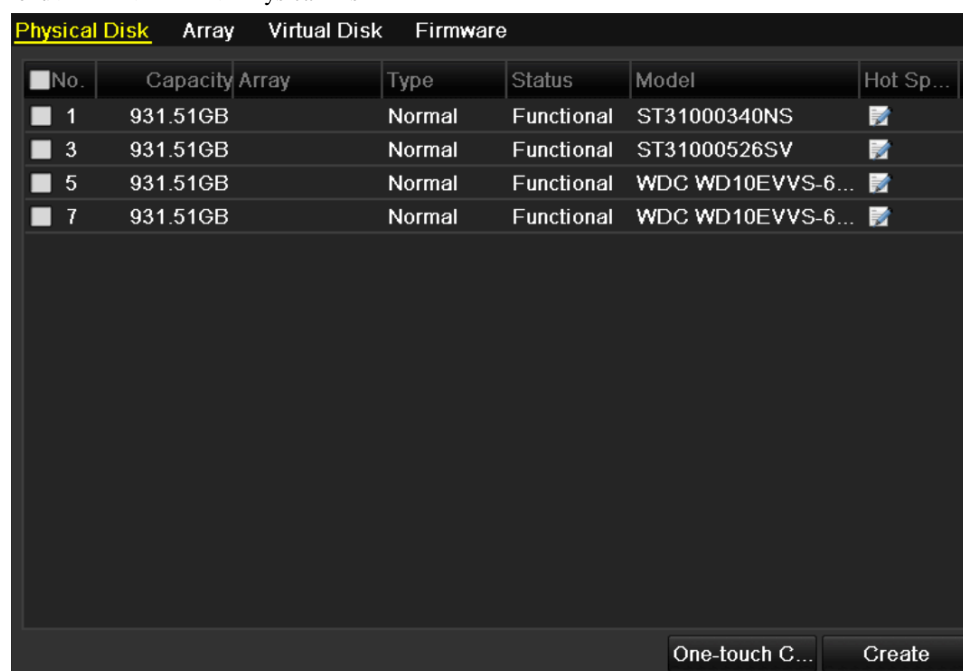


Figure 10.2 Physical Disk Settings Interface

2. Click **One-touch C...** to enter the One-touch Array Configuration interface.

**Note:** As the default array type is RAID 5, at least 3 HDDs must be installed in you device.

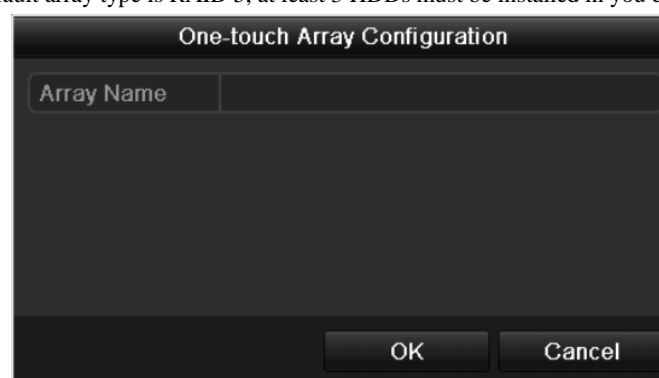


Figure 10.3 One-touch Array Configuration

3. Edit the array name in the **Array Name** text filed and click **OK** start configuring array.  
**Note:** If you install 4 HDDs or above for one-touch configuration, a hot spare disk will be set by default. It is recommended to set hot spare disk for automatically rebuilding the array when the array is abnormal.
4. When the array configuration is completed, click **OK** in the pop-up message box to finish the settings.



5. You can click **Array** tab to view the information of the successfully created array.

**Notes:**

- 1) By default, one-touch configuration creates an array and a virtual disk.
- 2) If the capacity of the array created by one-touch configuration is greater than 16TB, two arrays and two virtual disks will be created.

Physical Disk <u>Array</u> Virtual Disk   Firmware										
No.	Name	Free Space	Physic...	Hot ...	Status	Level	Re...	Mig...	Del...	Task
1	RAID	0/1862G	1 3 7	5	Funci...	RAID 5				None

Figure 10. 4 Array Settings Interface

6. Click Virtual Disk tab to view the automatically created virtual disk.

**Notes:**

- 1) By default, one-touch configuration adopts foreground initialization to initialize the virtual disk. By using foreground initialization, the virtual disk can be used only after the initialization is complete.
- 2) If the capacity of the array created by one-touch configuration is greater than 16TB, two arrays and two virtual disks will be created.

Physical Disk   Array <u>Virtual Disk</u> Firmware										
No.	Name	Cap...	Array	Status	Type	Repair	Delete	Task		
1	vd_RAID	1862G	RAID	Funcio...	RAID 5	—		Initialize (Foreground)		

Figure 10. 5 Virtual Disk Settings Interface

7. After the foreground initialization of the virtual disk is complete, the virtual disk will display in the HDD Information interface (Menu>HDD>General). For operation guide of initializing the virtual disk, please refer to *Chapter 11.1 Initializing HDDs*.

**Note:** For configuring hot spare disk manually, please refer to steps 12-15 of *Chapter 10.1.2*.

## 10.1.2 Manually Creating Array and Virtual Disk

**Purpose:**

You can manually create the array of RAID 0, RAID 1, RAID 5 and RAID 10.

**Note:** In this section, we take RAID 5 as an example to describe the manual configuration of array and virtual disk.

**Steps:**

1. Enter the Physical Disk Settings interface.  
Menu > HDD > RAID > Physical Disk

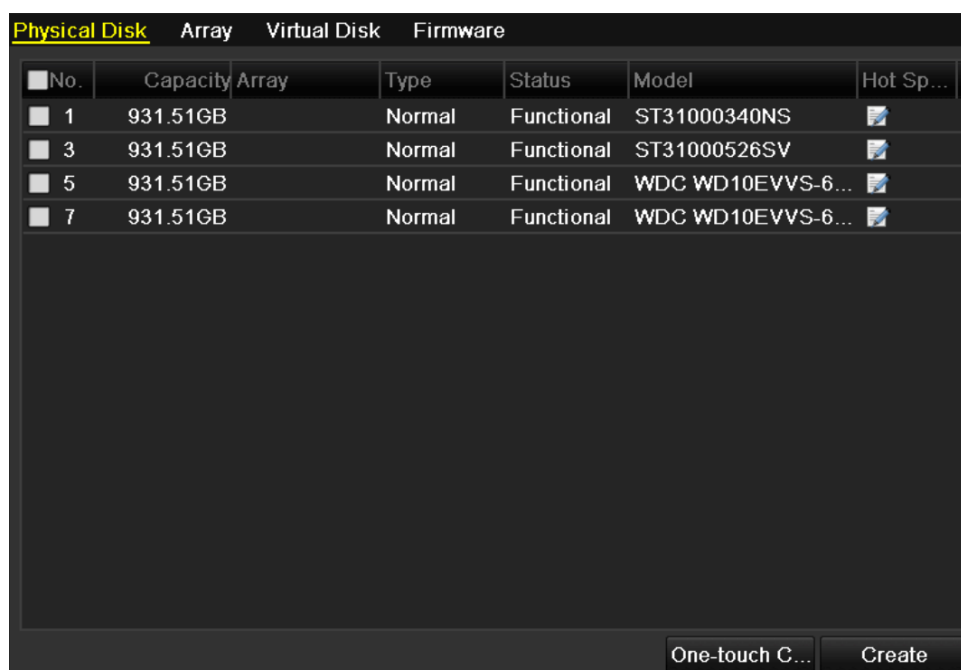



Figure 10.6 Physical Disk Settings Interface

2. Click  to enter the Create Array interface.

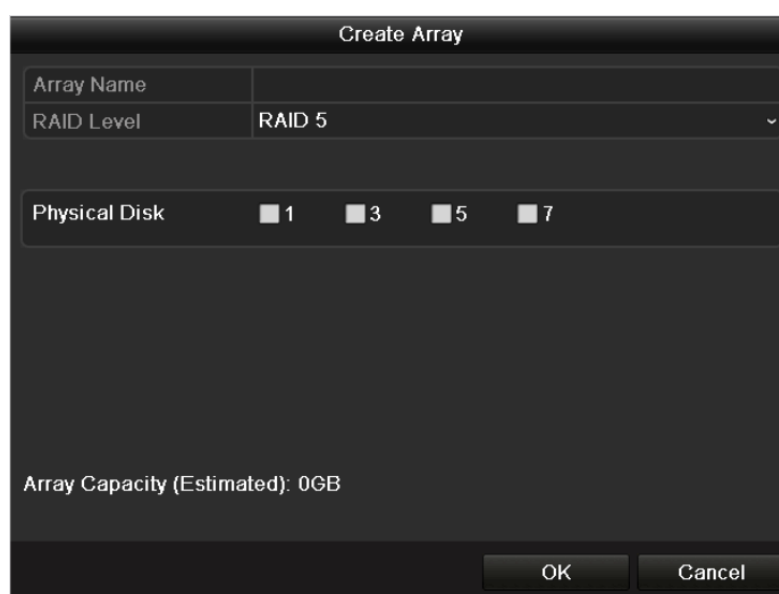



Figure 10.7 Create Array Interface

3. Edit the **Array Name**; set the **RAID Level** to RAID 0, RAID 1, RAID 5 or RAID 10; select the **Physical Disk** that you want to configure array.

**Notes:**

- 1) If you choose RAID 0, at least 2 HDDs must be installed.
  - 2) If you choose RAID 1, 2 HDDs need to be configured for RAID 1.
  - 3) If you choose RAID 5, at least 3 HDDs must be installed.
  - 4) If you choose RAID 10, 4/6/8 HDDs need to be configured for RAID 10.
4. Click  to create array.

**Note:** If the number of HDDs you select is not compatible with the requirement of the RAID level, the error message box will pop up.



Figure 10.8 Error Message Box

5. You can click **Array** tab to view the successfully created array.

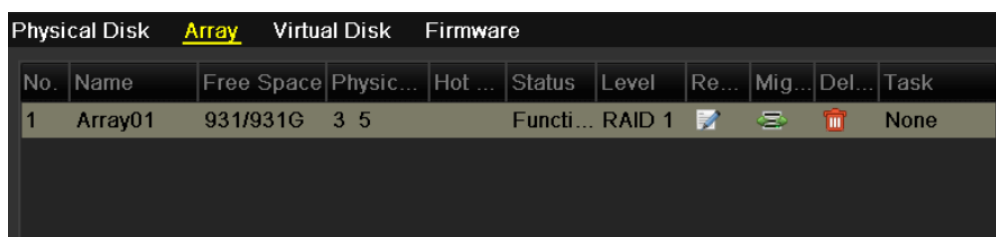


Figure 10.9 Array Settings Interface

6. Click to select an array and click **Create Vd** to enter the Create Virtual Disk interface.

**Note:** The device supports creating at most 8 virtual disks.

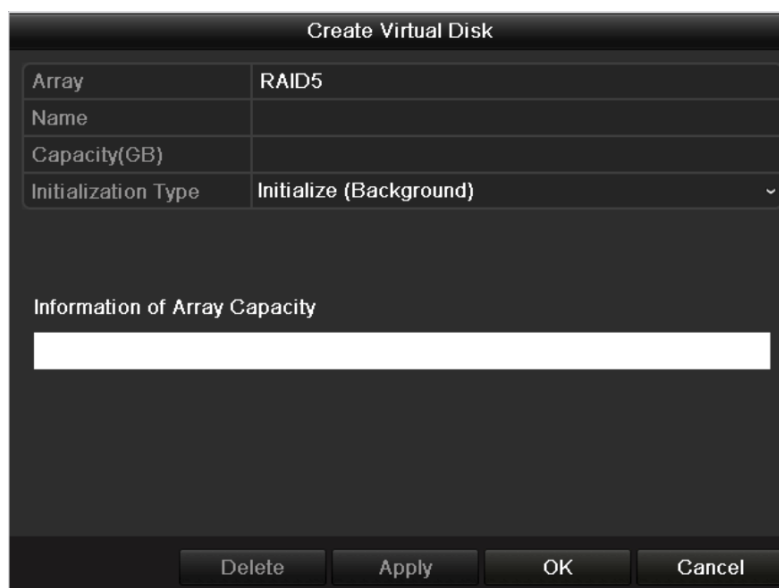


Figure 10.10 Create Virtual Disk Interface

7. Edit the name of the virtual disk, set the capacity for the virtual disk and select the initialization type for the virtual disk.

**Notes:**

- 1) You can also click the **Information of Array Capacity** area to set the remaining capacity of the array for the disk.
- 2) It is recommended to create one virtual disk of an array.

- 3) At least 100GB capacity must be configured for each virtual disk.
- 4) There are three initialization types, including Background, Foreground and Fast.

**Fast (Not Recommended):** The fast initialization usually takes short time and only initializes part of the RAID, and cannot detect the bad sector.

**Foreground (Recommended):** By using foreground initialization, the RAID will be initialized totally and the bad sector of the hard disks can be detected and repaired. The virtual disk can be used only after the initialization is complete.

**Background:** The background initialization can synchronize the disks, and detect and repair the bad sector of the disks. During the background initialization, the virtual disk is allowed to be used.

8. Click **Apply** to save the settings and click **OK** to return to Array Settings interface
9. Click Virtual Disk tab to enter the Virtual Disk interface. The successfully created virtual disk will be listed on the interface.

Physical Disk   Array <u>Virtual Disk</u> Firmware								
No.	Name	Cap...	Array	Status	Type	Repair	Delete	Task
1	Virtual Disk	100G	RAID5	Function...	RAID 5	—		Initialize (Background)

Figure 10. 11 Virtual Disk Interface

10. Enter the HDD Information interface (Menu>HDD>General) and the virtual disk will display. For operation guide of initializing the virtual disk, please refer to *Chapter 11.1 Initializing HDDs*.

**Note:** If you adopt foreground initialization, the virtual disk will display in the HDD Information interface after the initialization is complete.

<u>HDD Information</u>									
<input type="checkbox"/> L...	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...	
<input checked="" type="checkbox"/> 1	100GB	Uninitialized	R/W	Array	0MB	1	—	—	

Figure 10. 12 HDD Information Interface

11. After the virtual disk has been initialized, the status will change from *Uninitialized* to *Normal*.

<u>HDD Information</u>									
<input type="checkbox"/> L...	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...	
<input checked="" type="checkbox"/> 1	100GB	Normal	R/W	Array	99GB	1	—	—	

Figure 10. 13 Initialization Finished

12. Enter the Physical Disk Settings interface to configure the hot spare disk.

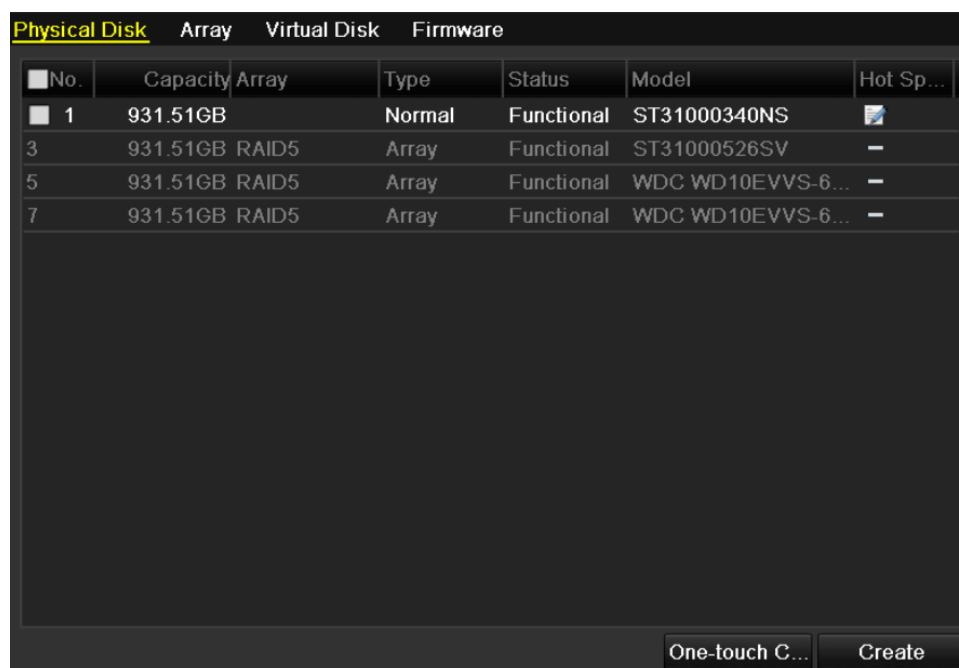


Figure 10.14 Physical Disk Settings Interface

13. Select a disk and click to enter the Set Hot Spare interface.

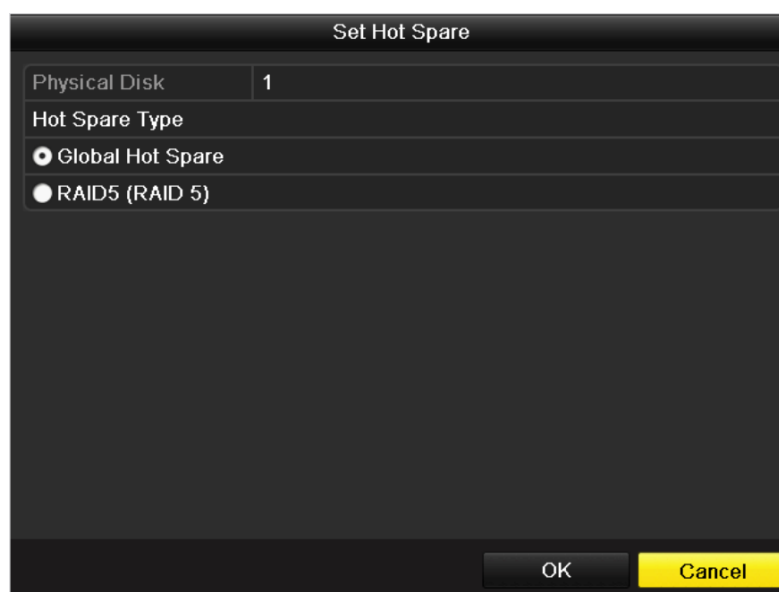


Figure 10.15 Set Hot Spare Interface

14. Set the hot spare type of the selected HDD to Global Hot Spare or the specified hot spare for the existing array.

**Global Hot Spare:** It can be used as the hot spare for any array created in the system.

**Array Hot Spare** (e.g. RAID 5): It can be used as the hot spare for the specified array only.

15. Click to finish the settings.

**Note:** When the auto-rebuild function is enabled, the hot spare disk will be automatically used for array rebuilding if the virtual disk is in **Degraded** status.

## 10.2 Rebuilding Array

### **Purpose:**

The working status of array includes Functional, Degraded and Offline. By viewing the array status, you can take immediate and proper maintenance for the disks so as to ensure the high security and reliability of the data stored in the disk array.

When there is no disk loss in the array, the working status of array will change to Functional; when the number of lost disks has exceeded the limit, the working status of array will change to Offline; in other conditions, the working status is Degraded.

When the virtual disk is in Degraded status, you can restore it to Functional by array rebuilding.

### 10.2.1 Automatically Rebuilding Array

#### **Purpose:**

When the virtual disk is in Degraded status, the device can start rebuilding the array automatically with the hot spare disk to ensure the high security and reliability of the data.

#### **Before you start:**

Enable the *Auto-rebuild* in Firmware Settings interface (Menu>HDD>RAID>Firmware) and the hot spare disk has been configured.

#### **Steps:**

1. Enter the Array Settings interface. The status of the array is Disk Loss. Since the hot spare disk is configured and *Auto-rebuild* function is enabled. The hot spare disk will be automatically used for array rebuilding.

Menu > HDD > RAID > Array

Physical Disk <u>Array</u> Virtual Disk   Firmware										
No.	Name	Free Space	Physic...	Hot ...	Status	Level	Re...	Mig...	Del...	Task
1	RAID5	0/1862G	2 7 3		Disk L...	RAID 5				Rebuild(Ru

Figure 10.16 Array Settings Interface

2. Enter the Virtual Disk interface to view the rebuilding status of the virtual disk.

Menu>HDD>RAID>Virtual Disk

Physical Disk   Array <u>Virtual Disk</u> Firmware								
No.	Name	Cap...	Array	Status	Type	Repair	Delete	Task
1	vd_RAID5	1862G	RAID5	Degrad...	RAID 5	—		Rebuild(Running) 7%

Figure 10.17 Virtual Disk Settings Interface

**Note:** If there is no hot spare disk after rebuilding, it is recommended to install a HDD into the device and set it as a hot spare disk to ensure the high security and reliability of the array. For detailed operation guide, please refer to

steps 12-15 of *Chapter 10.1.2*

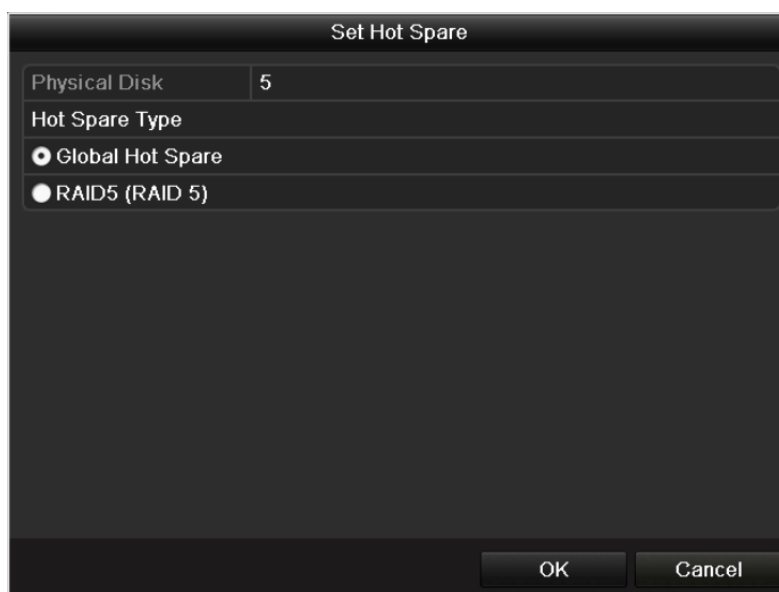


Figure 10. 18 Set Hot Spare Disk Interface

## 10.2.2 Manually Rebuilding Array

### **Purpose:**

If you do not enable the Auto-rebuild in Firmware Settings interface (Menu>HDD>RAID>Firmware) or the hot spare disk has not been configured, then you can rebuild the array manually to restore the array when the virtual disk is in Degraded status.

### **Steps:**

1. Enter the Array Settings interface. The disk 3 is lost.

Menu > HDD > RAID > Array

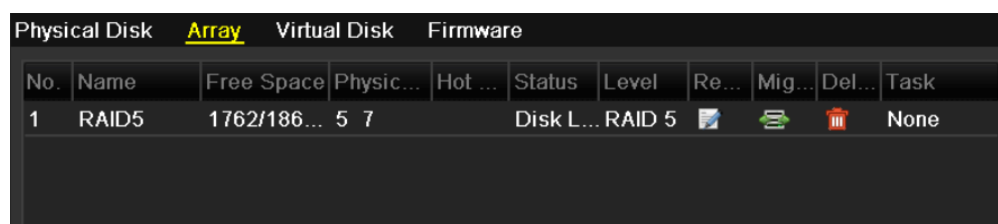


Figure 10. 19 Array Settings Interface

2. Enter the Virtual Disk interface to check the status of the virtual disk. The virtual disk is in Degraded status.

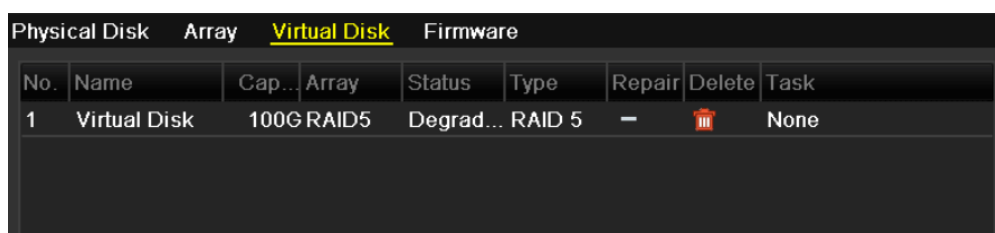


Figure 10. 20 Virtual Disk Interface

- Click Array tab to back to the Array Settings interface and click to configure the array rebuild.

**Note:** At least one available physical disk should exist for rebuilding the array.

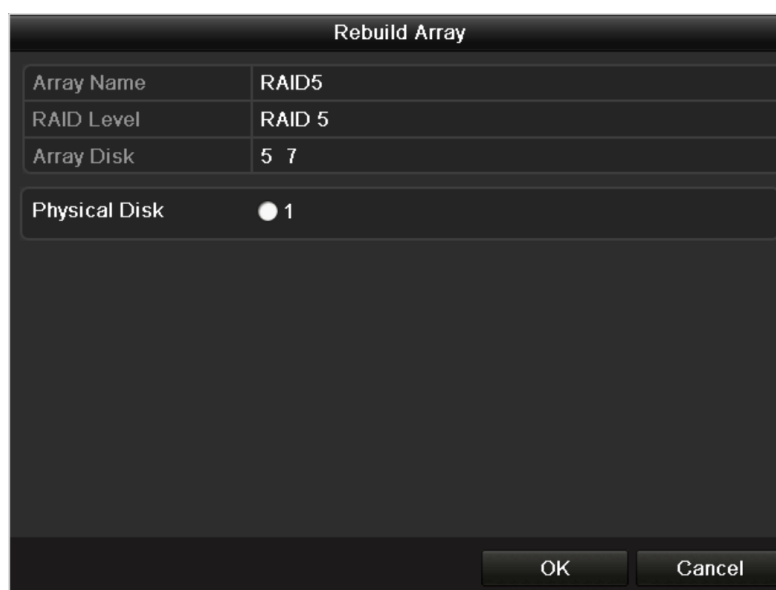


Figure 10. 21 Rebuild Array Interface

- Select the available physical disk and click **OK** to confirm to rebuild the array.
  - The “Do not unplug the physical disk when it is under rebuilding” message box pops up. Click **OK** to start rebuilding.
  - You can enter the Array Settings interface and Virtual Disk interface to view the rebuilding status.
  - After rebuilding successfully, the array and virtual disk will restore to Functional.
- Note:** It is recommended to enable the *Auto-rebuild* function and set the hot spare disk for automatically rebuilding the array.



## 10.3 Repairing Virtual Disk

### Purpose:

When the disk cannot display in the HDD Information interface while the virtual disk can still show in the Array Settings interface, you have to repair the virtual disk.

**Note:** If the virtual disk is under foreground initialization, the repairing cannot be done.

### Steps:

1. Enter the Virtual Disk interface.

Menu > HDD > RAID > Virtual Disk

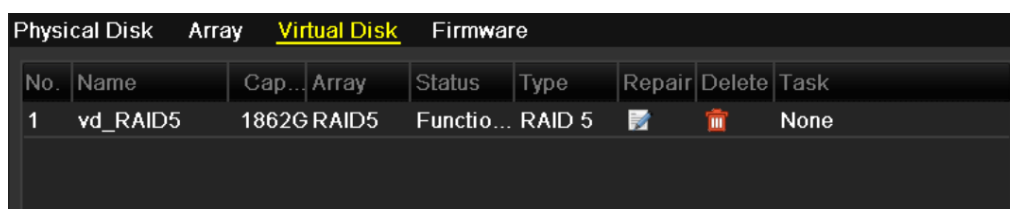


Figure 10.22 Virtual Disk Interface

2. Click to repair the virtual disk. After successfully repairing, the following message box will pop up. Click **OK** to finish the settings.



Figure 10.23 Repairing Virtual Disk Successfully

The disk shows again in the HDD Information interface (Menu>HDD>General).

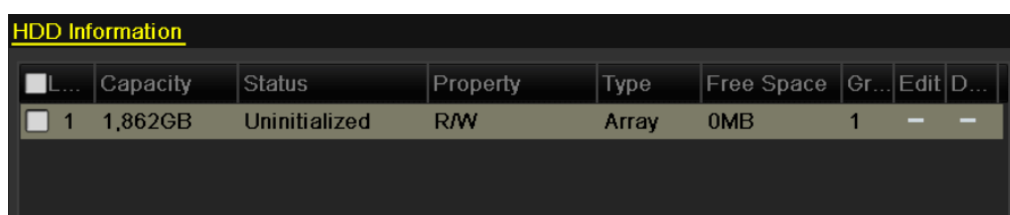


Figure 10.24 HDD Information Interface

## 10.4 Deleting Array / Virtual Disk

**Note:** Before deleting the array, the virtual disk(s) under this array must be deleted first. Deleting array and virtual disk will delete all the data saved in the disk.

### 10.4.1 Deleting the Virtual Disk

**Steps:**

1. Enter the Virtual Disk interface.

Menu>HDD>RAID>Virtual Disk

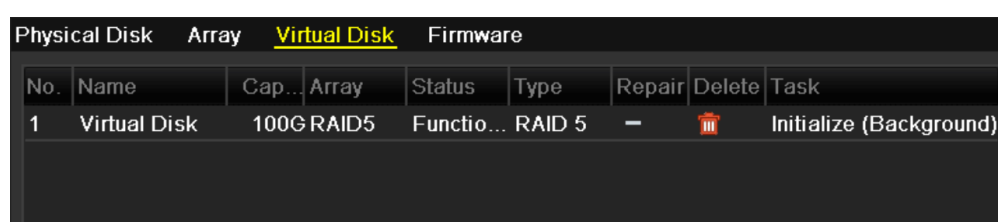


Figure 10. 25 Virtual Disk Interface

2. Select a virtual disk and click  to delete the virtual disk.



Figure 10. 26 Confirm Virtual Disk Deletion

3. In the pop-up message box, click  to confirm the virtual disk deletion.

**Note:** Deleting virtual disk will cause to delete all the data saved in the disk.

### 10.4.2 Deleting the Array

**Note:** If all the virtual disks under an array have been deleted, then you can delete that array.

**Steps:**


1. Enter the Array Settings interface.

Menu>HDD>RAID>Array

Physical Disk <u>Array</u> Virtual Disk   Firmware											
No.	Name	Free Space	Physic...	Hot ...	Status	Level	Re...	Mig...	Del...	Task	
1	RAID5	1762/186...	2 5 7		Funci...	RAID 5				None	

Figure 10. 27 Array Settings Interface

---

2. Select an array and click  to delete the array.

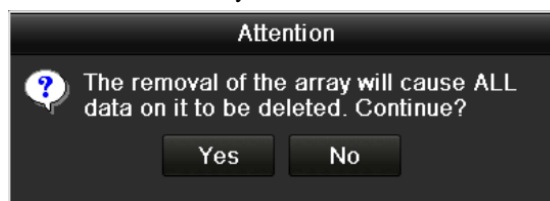


Figure 10. 28 Confirm Array Deletion

---

3. In the pop-up message box, click  to confirm the array deletion.
- Note:** Deleting array will cause to delete all the data in the array.

## 10.5 Migrating and Expanding

### *Purpose:*

When the remaining storage space is lower than the actual needs, you can take array migration and online expansion to enlarge the capacity of the virtual disk.

### *Before you start:*

At least one available physical disk should exist for the array migration.

### *Steps:*

1. Enter the Physical Disk Settings interface. At least one available physical disk should exist for the array migration.

Menu>HDD>RAID>Physical Disk

Physical Disk						
No.	Capacity	Array	Type	Status	Model	Hot Sp...
2	931.51GB	RAID5	Array	Functional	ST31000526SV	—
3	931.51GB		Normal	Functional	WDC WD10EVVS-6...	
5	931.51GB	RAID5	Array	Functional	WDC WD10EVVS-6...	—
7	931.51GB	RAID5	Array	Functional	WDC WD10EVVS-6...	—

Figure 10. 29 Physical Disk Settings Interface

2. Click Array tab to enter the Array Settings interface.

Physical Disk										
Array										
No.	Name	Free Space	Physic...	Hot ...	Status	Level	Re...	Mig...	Del...	Task
1	RAID5	1762/186...	2 5 7		Funci...	RAID 5				None

Figure 10. 30 Array Settings Interface

3. Select the array to be migrated and click  to enter the Migrate Array interface.

### *Notes:*

- 1) Only migrating from RAID 5 to RAID 5 is supported by the device.
- 2) If there is no virtual disk existing under the array, the array migration cannot be done.
- 3) If the virtual disk of the array is under initialization, the array migration cannot be done.

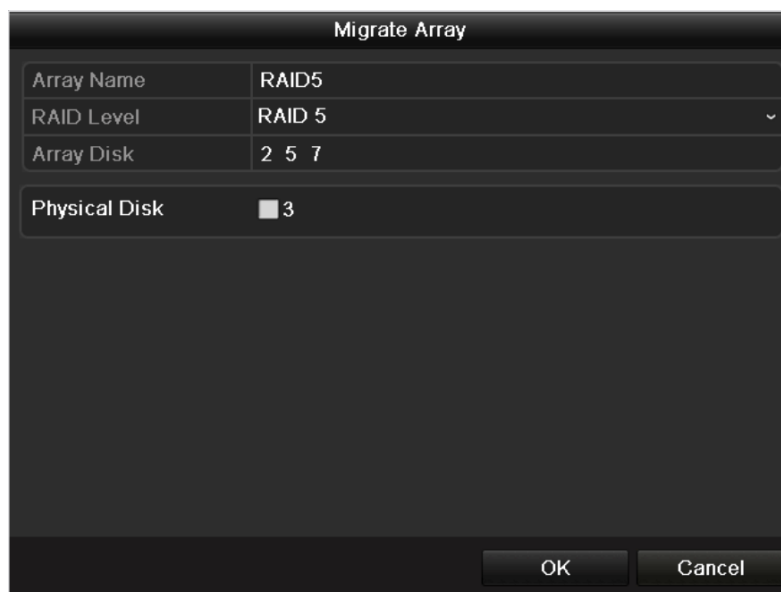


Figure 10.31 Migrate Array Interface

4. Select the available physical disk(s) and click **OK** to confirm the settings. The message box of “Do not unplug the physical disk when it is under migration” will pop up. Click **OK** to start migration.
5. You can enter the Array Settings interface (Menu>HDD>RAID>Array) and Virtual Disk interface (Menu>HDD>RAID>Virtual Disk) to check the process of the migration.

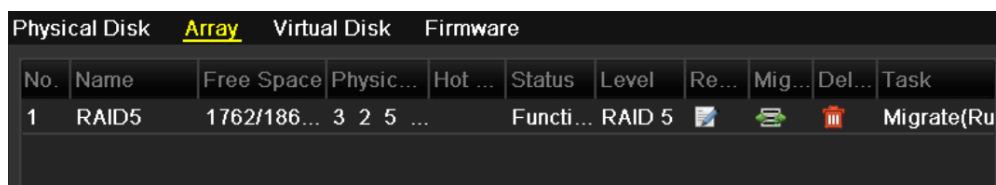


Figure 10.32 Array Setting Interface

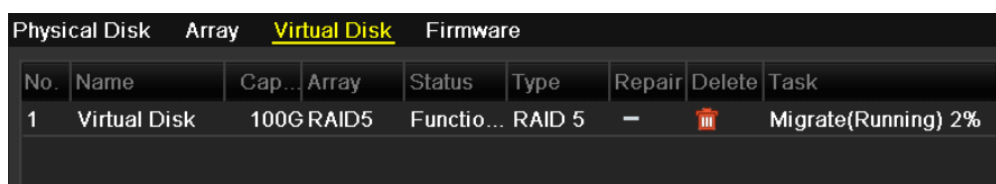


Figure 10.33 Virtual Disk Interface

6. Reboot the device to take effect of the new settings after the migration process finishes.
7. Enter the HDD Information interface after rebooting. Select an expandable virtual disk and click **Expand** to expand the capacity of the virtual disk.

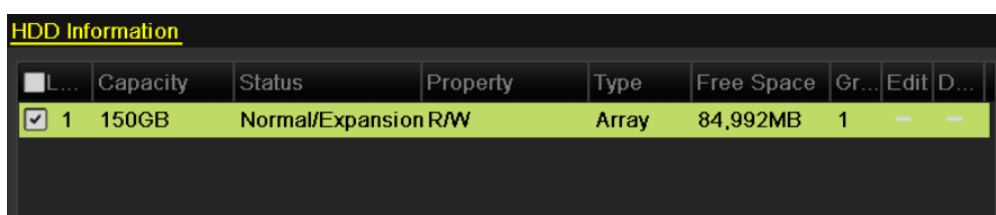


Figure 10.34 HDD Information Interface

8. In the pop-up message box, click **OK** to start expanding.



Figure 10.35 Message Box for Expansion

9. After expanding finished, the following message box pops up. Click **OK** to finish the settings.

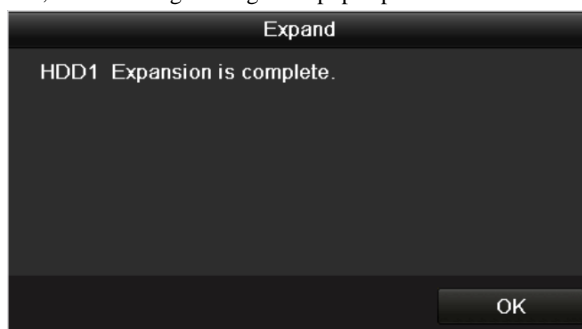


Figure 10.36 Message Box for Expanding Finished

**Note:** After RAID migration and capacity expansion, the expanded capacity for each virtual disk can be calculated by the following formula: Expanded VD capacity = (Original VD Capacity / Original Array Capacity) \* Newly Added Capacity of Hard Disk.

**Example:** The capacity of the original array is 2TB and two virtual disks exist under this array: VD1 (100GB) and VD2 (200GB). If you migrate the array with a 1TB HDD, then after migration and expanding, the expanded VD1 capacity is 50GB, that is  $50\text{GB} = (100\text{GB}/2\text{TB}) * 1\text{TB}$ . And the expanded VD2 capacity is 100GB, that is  $100\text{GB} = (200\text{GB}/2\text{TB}) * 1\text{TB}$ .


## 10.6 Upgrading Firmware

### *Purpose:*

You can view the information of the firmware and upgrade the firmware by local backup device or remote FTP server.

### *Steps:*

1. Enter the Firmware interface to check the information of the firmware, including the version, maximum physical disk quantity, maximum array quantity, auto-rebuild status, etc.



The screenshot displays the 'Firmware' tab in a web interface. At the top, there are four tabs: 'Physical Disk', 'Array', 'Virtual Disk', and 'Firmware' (which is highlighted with a yellow underline). Below the tabs is a table with the following data:

Version	1.1.0.1919
Physical Disk Count	8
Array Count	8
Virtual Disk Count	8
RAID Level	0 1 5 10
Hot Spare Type	Global Hot Spare, Array Hot Spare
Support Rebuild	Yes
Support Migration	Yes
Auto-rebuild	<input checked="" type="checkbox"/>

At the bottom right of the interface, there are three buttons: 'Upgrade', 'Apply', and 'Back'.

Figure 10. 37 Firmware Interface

2. You can click **Upgrade** to upgrade the firmware. Local upgrade and FTP upgrade are available. Since the upgrading process of the firmware is the same as that of the device firmware, you can refer to *Chapter 13.4* for detailed information.

**Note:** Please contact the dealer immediately if the device cannot work properly after upgrading.



Figure 10. 38 Upgrade the Firmware

---



## **Chapter 11 HDD Management**

**Note:** In this chapter, we use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

## 11.1 Initializing HDDs

### **Purpose:**

A newly installed hard disk drive (HDD) must be initialized before it can be used with your device.

**Note:** If there is uninitialized HDD existed in the device, the following message box pops up when the device starts up.

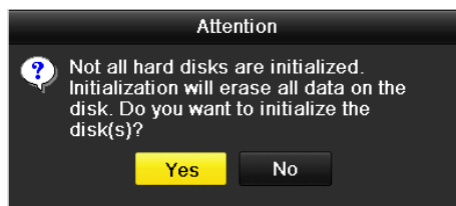


Figure 11. 1 Message Box of Uninitialized HDD

Click **Yes** to initialize it immediately or you can perform the following steps to initialize the HDD(s).

### **Steps:**

1. Enter the HDD Information interface.

Menu > HDD>General

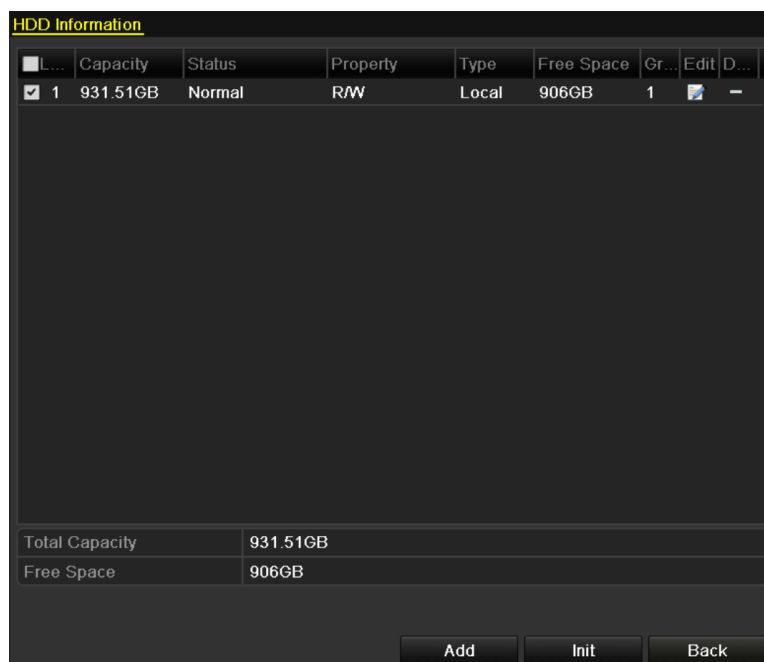


Figure 11. 2 HDD Information Interface

2. Select HDD to be initialized.
3. Click **Init**.

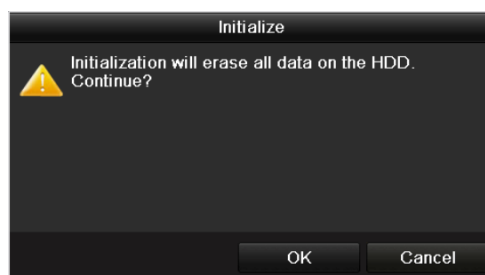


Figure 11.3 Confirm Initialization

- 
4. Select **OK** to start initialization.

**HDD Information**

<input type="checkbox"/> L...	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...
<input checked="" type="checkbox"/> 4	931.51GB	Initializing 44%	R/W	Local	0MB	1	-	-

Figure 11.4 Start Initialization

- 
5. After the HDD has been initialized, the status of the HDD will change from *Uninitialized* to *Normal*.

**HDD Information**

<input type="checkbox"/> L...	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...
<input type="checkbox"/> 5	931.51GB	Normal	R/W	Local	846GB	1		-

Figure 11.5 HDD Status Changes to Normal

---

**Note:** Initializing the HDD will erase all data on it.

## 11.2 Managing Network HDD

### *Purpose:*

You can add the allocated NAS or disk of IP SAN to device, and use it as network HDD.

### *Steps:*

1. Enter the HDD Information interface.

Menu > HDD > General

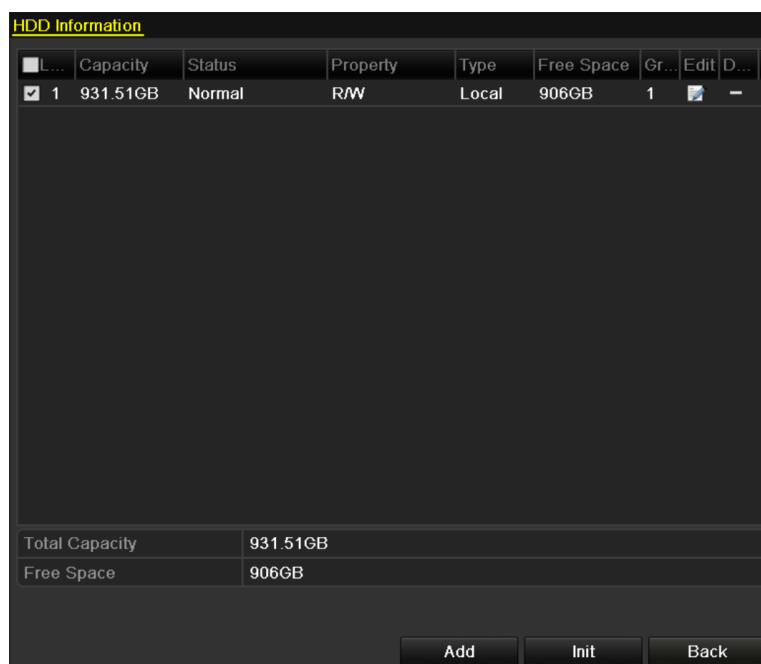


Figure 11. 6 HDD Information Interface

2. Click **Add** to enter the Add NetHDD interface, as shown in Figure 11.6.

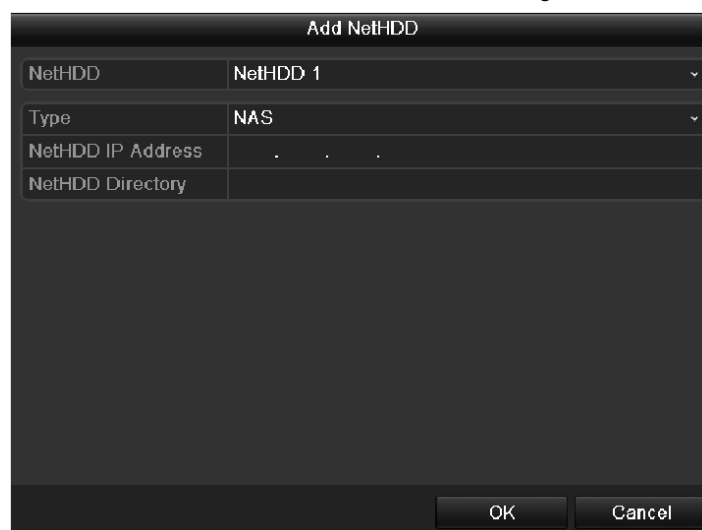


Figure 11. 7 Adding NetHDD Interface

3. Add the allocated NetHDD.
4. Select the type to NAS or IP SAN.

**5. Configure the NAS or IP SAN settings.****• Add NAS disk:**

- 1) Enter the NetHDD IP address in the text field.
- 2) Click **Search** to search the available NAS disks.
- 3) Select the NAS disk from the list shown below.

Or you can just manually enter the directory in the text field of NetHDD Directory.

- 4) Click **OK** to add the configured NAS disk.

**Note:** Up to 8 NAS disks can be added.

The screenshot shows the 'Add NetHDD' dialog box. It has a title bar 'Add NetHDD'. Below the title bar, there are four input fields: 'NetHDD' (set to 'NetHDD 1'), 'Type' (set to 'NAS'), 'NetHDD IP Address' (set to '172.6.24.201'), and 'NetHDD Directory' (set to '/dvr/dvr\_1'). Below these fields is a table with two columns: 'No.' and 'Directory'. The table contains three rows: Row 1: '1' and '/dvr/dvr\_2'; Row 2: '2' and '/dvr/dvr\_1' (highlighted in yellow); Row 3: '3' and '/mnt/backup/indexbackup'. At the bottom of the dialog box are three buttons: 'Search', 'OK', and 'Cancel'.

No.	Directory
1	/dvr/dvr_2
2	/dvr/dvr_1
3	/mnt/backup/indexbackup

Figure 11. 8 Add NAS Disk

---

**• Add IP SAN:**

- 1) Enter the NetHDD IP address in the text field.
- 2) Click **Search** to search the available IP SAN disks.
- 3) Select the IP SAN disk from the list shown below.
- 4) Click **OK** to add the selected IP SAN disk.

**Note:** Up to 1 IP SAN disk can be added.

The screenshot shows the 'Add NetHDD' dialog box. It has a title bar 'Add NetHDD'. Below the title bar, there are four input fields: 'NetHDD' (set to 'NetHDD 1'), 'Type' (set to 'IP SAN'), 'NetHDD IP Address' (set to '172.9.2.210'), and 'NetHDD Directory' (set to 'iqn.2004-05.storos.t-8'). Below these fields is a table with two columns: 'No.' and 'Directory'. The table contains three rows: Row 1: '1' and 'iqn.2004-05.storos.t-8' (highlighted in yellow); Row 2: '2' and 'iqn.2004-05.storos.t-41'; Row 3: '3' and 'iqn.2004-05.storos.t-1000'. At the bottom of the dialog box are three buttons: 'Search', 'OK', and 'Cancel'.

No.	Directory
1	iqn.2004-05.storos.t-8
2	iqn.2004-05.storos.t-41
3	iqn.2004-05.storos.t-1000

Figure 11. 9 Add IP SAN Disk

---

6. After having successfully added the NAS or IP SAN disk, return to the HDD Information menu. The added NetHDD will be displayed in the list.

**Note:** If the added NetHDD is uninitialized, please select it and click **Init** for initialization.

**HDD Information**

<input type="checkbox"/> L...	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...
<input checked="" type="checkbox"/> 1	931.51GB	Normal	R/W	Local	906GB	1		—
<input checked="" type="checkbox"/> 17	40,000MB	Normal	R/W	IP SAN	22,528MB	1		

Figure 11. 10 Initialize Added NetHDD

---

## 11.3 Managing eSATA

### **Purpose:**

When there is an external eSATA device connected to device, you can configure eSATA for the use of Record/Capture or Export, and you can manage the eSATA in the device.

### **Steps:**

1. Enter the Advanced Record Settings interface.

Menu > Record>Advanced

2. Select the eSATA type to eSATA1.

3. Set the Usage as Record/Capture or Export.

**Export:** Use the eSATA for backup. Refer to *Backup using eSATA HDDs* in *Chapter 7.1.2 Backing up by Normal Video Search* for operating instructions.

**Record/Capture:** Use the eSATA for record/capture. Refer to the following steps for operating instructions.

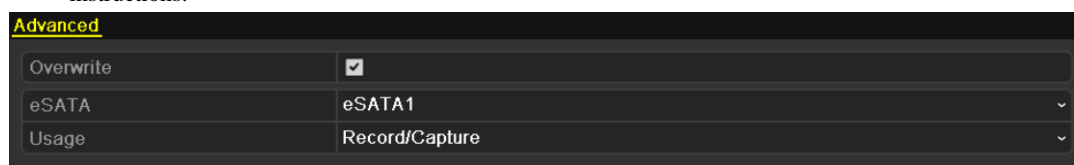


Figure 11. 11 Set eSATA Usage

---

4. When the eSATA usage is selected to Record/Capture, enter the HDD Information interface.

Menu > HDD > General

5. Edit the property of the selected eSATA, or initialize it is required.

**Note:** Three storage modes can be configured for the eSATA when it is used for Record/Capture. Please refer to *Chapter 11.4*, *Chapter 11.5* and *Chapter 11.6* for details.

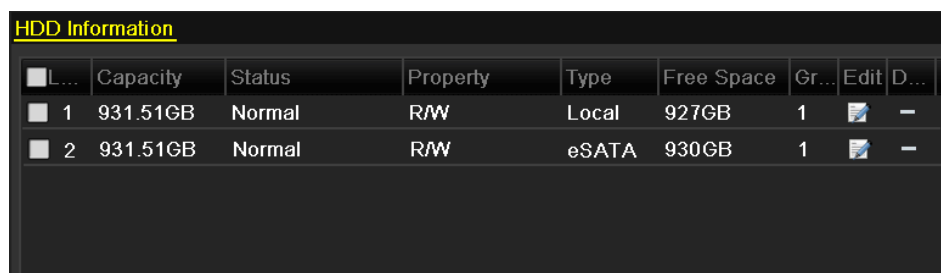


Figure 11. 12 Initialize Added eSATA

---

## 11.4 Managing HDD Group

### 11.4.1 Setting HDD Groups

**Purpose:**

Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a particular HDD group through HDD settings.

**Steps:**

1. Enter the Storage Mode interface.  
Menu > HDD > Advanced
2. Set the **Mode** to Group, as shown below.

**Note:** The device must be rebooted to activate the changes.

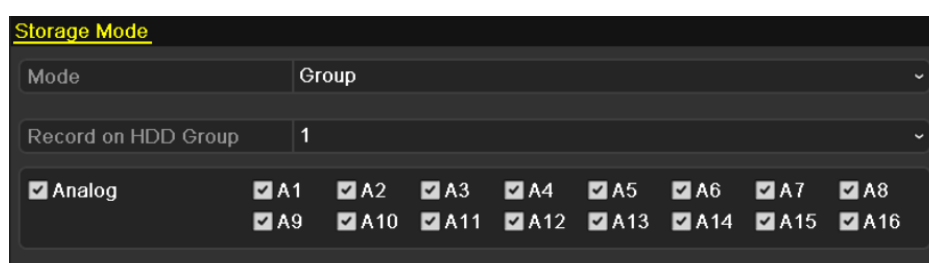


Figure 11.13 Storage Mode Interface for DVR Series

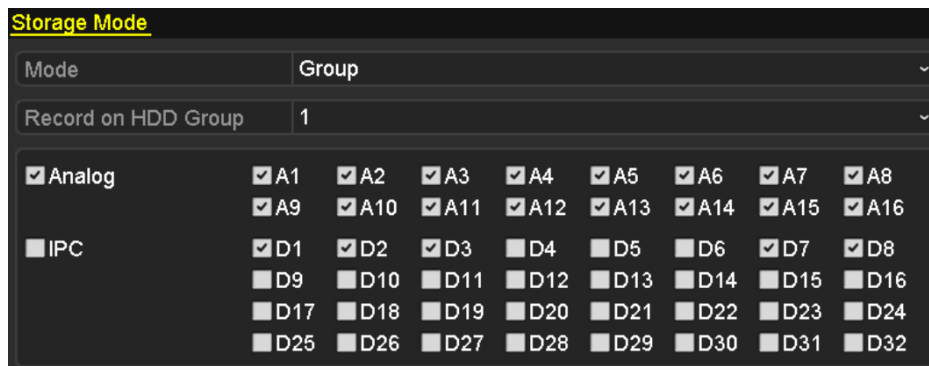


Figure 11.14 Storage Mode Interface for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

3. Click **Apply** and the following Attention box will pop up.

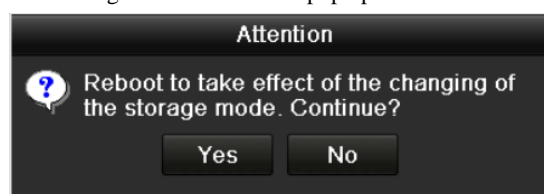


Figure 11.15 Attention for Reboot

4. Click **Yes** to reboot the device to activate the changes.
5. After reboot of device, enter the HDD Information interface.



Menu > HDD > General


6. Select a HDD from the list and click  to enter the Local HDD Settings interface, as shown in Figure 11.16.



Figure 11.16 Local HDD Settings Interface



7. Select the Group number for the current HDD.  
**Note:** The default group No. for each HDD is 1.
8. Click  to confirm the settings.



Figure 11.17 Confirm HDD Group Settings

9. In the pop-up Attention box, click  to finish the settings.

## 11.4.2 Setting HDD Property

### **Purpose:**

The HDD property can be set to redundancy, read-only or read/write (R/W). Before setting the HDD property, please set the storage mode to Group (refer to step1-4 of *Chapter 11.4.1 Setting HDD Groups*).

A HDD can be set to read-only to prevent important recorded files from being overwritten when the HDD becomes full in overwrite recording mode.

When the HDD property is set to redundancy, the video can be recorded both onto the redundancy HDD and the R/W HDD simultaneously so as to ensure high security and reliability of video data.

### **Steps:**


1. Enter the HDD Information interface.  
Menu > HDD > General
2. Select a HDD from the list and click  to enter the Local HDD Settings interface, as shown in Figure 11.18.



Figure 11. 18 Set HDD Property

3. Set the HDD property to R/W, Read-only or Redundancy.
4. Click **OK** to save the settings and exit the interface.
5. In the HDD Information menu, the HDD property will be displayed in the list.

**Note:** At least 2 hard disks must be installed on your device when you want to set a HDD to Redundancy, and there is one HDD with R/W property.

## 11.5 Configuring Quota Mode

### Purpose

Each camera can be configured with allocated quota for the storage of recorded files or captured pictures.

### Steps

1. Enter the Storage Mode interface.  
Menu > HDD > Advanced
2. Set the **Mode** to Quota, as shown in Figure 11.19.

**Note:** The device must be rebooted to activate the changes.

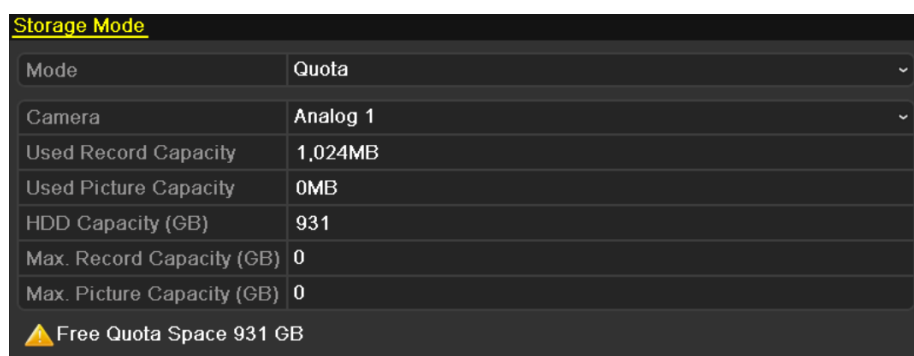


Figure 11. 19 Storage Mode Settings Interface

3. Select a camera for which you want to configure quota. In HDVR series device you can select **IP Camera**.
4. Enter the storage capacity in the text fields of **Max. Record Capacity (GB)** and **Max. Picture Capacity (GB)**, as shown in Figure 11.20.

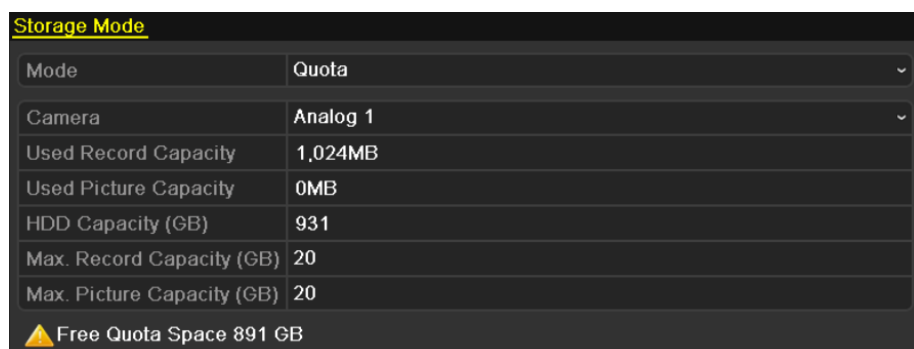


Figure 11. 20 Configure Record/Picture Quota

5. You can copy the quota settings of the current camera to other cameras if required. Click **Copy** to enter the Copy Camera menu, as shown below.



Figure 11.21 Copy Settings to Other Camera(s) for DVR Series



Figure 11.22 Copy Settings to Other Camera(s) for HDVR Series

**Note:** IP Camera is supported by HDVR series only.

6. Select the camera (s) to be configured with the same quota settings. You can also click the checkbox of **Analog** or **IP Camera** to select all cameras.
7. Click **OK** to finish the Copy settings and back to the Storage Mode interface.
8. Click **Apply** to save the settings.

**Note:** If the quota capacity is set to 0, then all cameras will use the total capacity of HDD for record and picture capture.

## 11.6 Configuring Frame Extracting Mode

### Purpose:

If you want to extend the record time of the HDD, you can set the storage mode of the HDD to Frame Extracting. In this mode, the bitrate of frame extracting record is less than 1/8 of that of normal record and the frame rate of frame extracting record is 1 fps so as to maintain longer storage time of the record files.

### Notes:

- 1) This chapter is only available for DVR series.
- 2) If you set the storage mode as Frame Extracting, you may only find the frame extracting record of low bitrate and frame rate at certain time period.

### Steps:

1. Enter the Storage Mode interface.  
Menu>HDD>Advanced
2. Set the **Mode** to Frame Extracting.

**Note:** The device must be rebooted to activate the change.

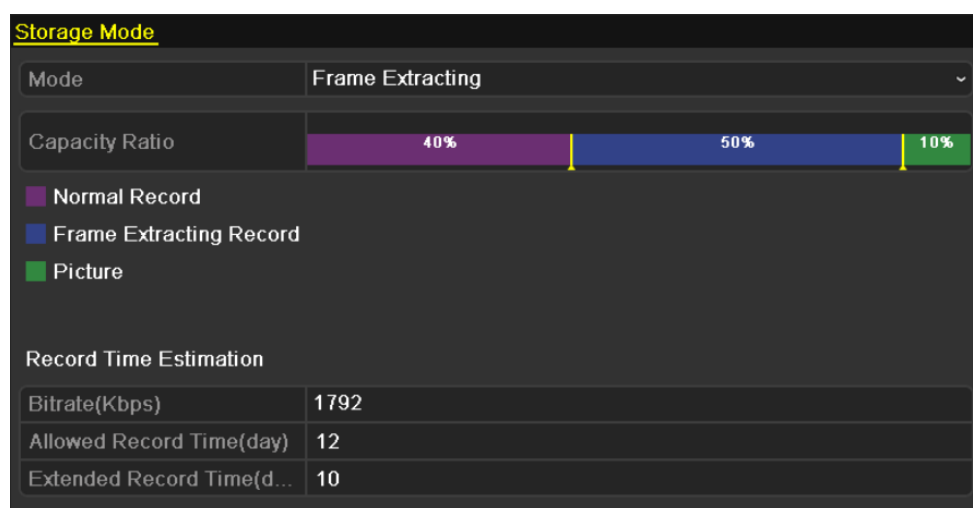



Figure 11. 23 Storage Mode Settings Interface

3. Drag  to adjust the storage percentages of normal record, frame extracting record and picture according to actual requirements.
4. You can edit the bitrate of the camera and the Allowed Record Time and Extended Record Time will change accordingly.

**Allowed Record Time:** The total recording time that is allowed when using the frame-extracting recording mode.

**Extended Record Time:** The recording time that is extended when using the frame-extracting recording mode.

**Example:** With the frame extracting mode configured, the Allowed Record Time is estimated as 12 and the Extended Record Time as 10, it means the HDD capacity allows the frame extracting record to last 12 days and the record time is extended for about 10 days. If you have not configured the frame extracting mode, the HDD capacity allows the record to last 2 days only.

**Notes:**

- 1) The estimation of the record time is only for reference.
- 2) If you change the storage capacity of the device, e.g., a new HDD is connected or a HDD is removed, you have to configure the frame extracting mode again.

## 11.7 Checking HDD Status

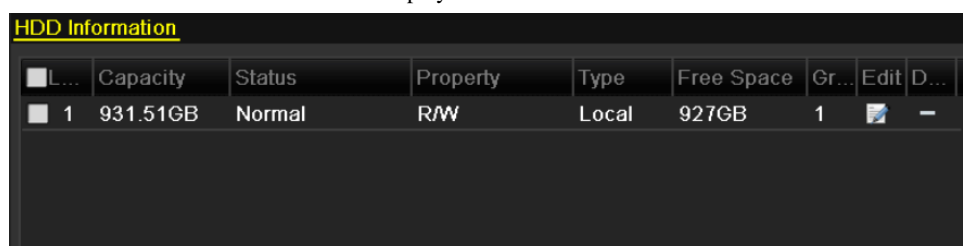
### *Purpose:*

You may check the status of the installed HDDs on device so as to take immediate check and maintenance in case of HDD failure.

### Checking HDD Status in HDD Information Interface

#### *Steps:*

1. Enter the HDD Information interface.  
Menu > HDD>General
2. Check the status of each HDD which is displayed on the list.



The screenshot shows a window titled "HDD Information" with a table containing the following data:

	Capacity	Status	Property	Type	Free Space	Gr...	Edit	D...
1	931.51GB	Normal	R/W	Local	927GB	1		-

Figure 11. 24 View HDD Status (1)

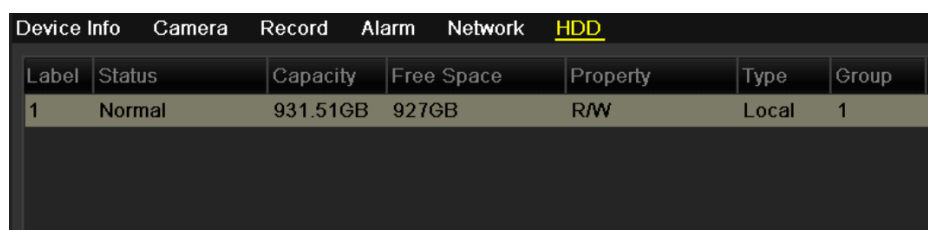
---

**Note:** If the status of HDD is *Normal* or *Sleeping*, it works normally. If the status is *Uninitialized* or *Abnormal*, please initialize the HDD before use. And if the HDD initialization is failed, please replace it with a new one.

### Checking HDD Status in HDD Information Interface

#### *Steps:*

1. Enter the System Information interface.  
Menu > Maintenance > System Info
2. Click the **HDD** tab to view the status of each HDD displayed on the list.



The screenshot shows a window with tabs: "Device Info", "Camera", "Record", "Alarm", "Network", and "HDD" (which is selected). Below the tabs is a table with the following data:

Label	Status	Capacity	Free Space	Property	Type	Group
1	Normal	931.51GB	927GB	R/W	Local	1

Figure 11. 25 View HDD Status (2)

---

## 11.8 Checking S.M.A.R.T. Information

### Purpose:

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a monitoring system for HDD to detect and report on various indicators of reliability in the hopes of anticipating failures.

**Note:** This chapter is not available for DS-9100/9000HFI-RT series.


### Steps:

1. Enter the S.M.A.R.T. Settings interface.

Menu > Maintenance > HDD Detect > S.M.A.R.T. Settings

2. Select a HDD to view its S.M.A.R.T. information list.

**Note:** If you want to use the HDD even when the S.M.A.R.T. checking is failed, you can check the checkbox before the **Continue to use this disk when self-evaluation is failed** item.

3. Three self-tests of S.M.A.R.T are provided, including Short Test, Expanded Test and Conveyance Test. You can select a self-test type and click  to start self-test.

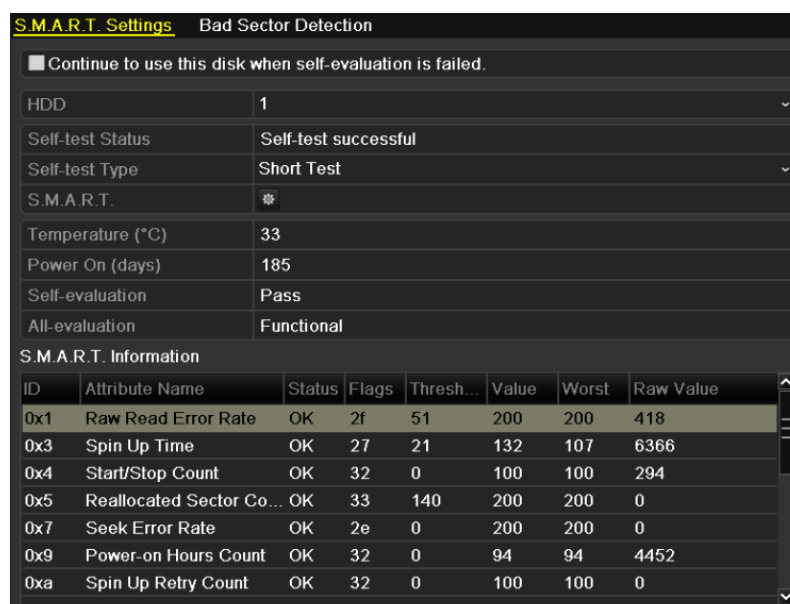


Figure 11. 26 S.M.A.R.T. Settings Interface



## 11.9 Detecting Bad Sector

### Purpose:

You can detect the bad sector of the HDD to check the status of the HDD.

**Note:** This chapter is not available for DS-9100/9000HFI-RT series.

### Steps:

1. Enter the Bad Sector Detection interface.

Menu>Maintenance>HDD Detect>Bad Sector Detection

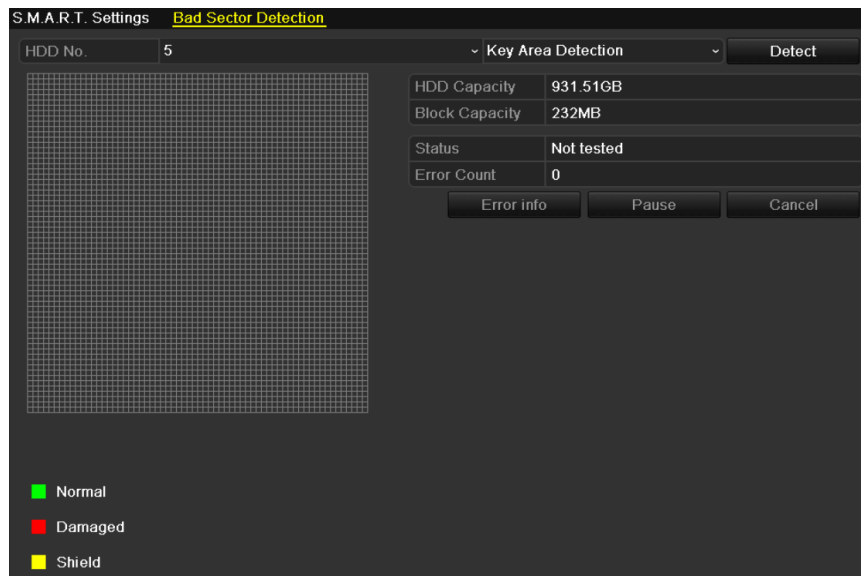


Figure 11. 27 Bad Sector Detection

2. Select a HDD and choose Full Detection or Key Area Detection as the detection type.
3. Click **Detect** to start detecting.

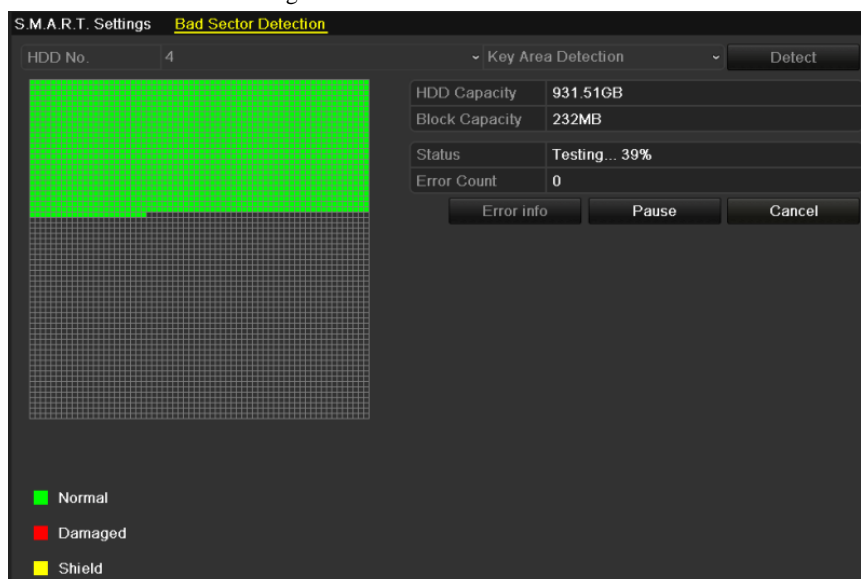
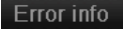


Figure 11. 28 Bad Sector Detecting

4. You can click **Pause** to pause the detection and click **Resume** to resume the detection.

5. If there is error information about the HDD, you can click  to view the information.

## 11.10 Configuring HDD Error Alarms

### *Purpose:*

You can configure the HDD error alarms when the HDD status is *Uninitialized* or *Abnormal*.

### *Steps:*

1. Enter the Exception interface.  
Menu > Configuration > Exceptions
2. Select the Exception Type to **HDD Error** from the dropdown list.
3. Click the checkbox(s) below to select the HDD error alarm type (s).

**Note:** The alarm type can be selected to: Audible Warning, Notify Surveillance Center, Send Email and Trigger Alarm Output. Please refer to *Chapter 8.6 Setting Alarm Response Actions*.

The screenshot shows the 'Exception' configuration window. At the top, the title is 'Exception'. Below it, there's a dropdown menu for 'Exception Type' which is currently set to 'HDD Full'. Underneath, there are four rows of settings, each with a label and a checkbox:

Exception Type	Value
Audible Warning	<input type="checkbox"/>
Notify Surveillance Center	<input checked="" type="checkbox"/>
Send Email	<input type="checkbox"/>
Trigger Alarm Output	<input checked="" type="checkbox"/>

Below these settings, there's a section for 'Alarm Output No.' and 'Alarm Name'. The 'Alarm Output No.' section has a list of four options, each with a checkbox:

Alarm Output No.	Alarm Name
<input type="checkbox"/> Local->1	
<input type="checkbox"/> Local->2	
<input type="checkbox"/> Local->3	
<input type="checkbox"/> Local->4	

Figure 11. 29 Configure HDD Error Alarm

4. When the Trigger Alarm Output (not supported by DS-7200 series) is selected, you can also select the alarm output to be triggered from the list below.
5. Click **Apply** to save the settings.

## **Chapter 12    Camera Settings**

## 12.1 Configuring OSD Settings

### Purpose:

You can configure the OSD (On-screen Display) settings for the camera, including date /time, camera name, etc.

**Note:** We use the interface of DS-9100HFI-ST series (unless otherwise stated) as example to describe the following settings.

### Steps:

1. Enter the OSD Configuration interface.  
Menu > Camera > OSD
2. Select the camera to configure OSD settings.
3. Edit the Camera Name in the text field.
4. Configure the Display Name, Display Date and Display Week by checking the checkbox.
5. Select the Date Format, Time Format and Display Mode.

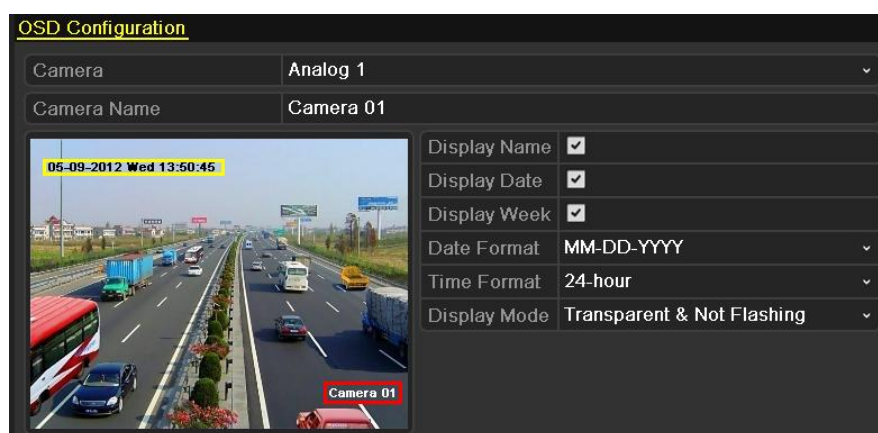


Figure 12. 1 OSD Configuration Interface

6. You can use the mouse to click and drag the text frame on the preview window to adjust the OSD position.
7. Copy Camera Settings
  - 1) If you want to copy the OSD settings of the current camera to other cameras, click **Copy** to enter the Copy Camera interface.



Figure 12. 2 Copy Settings to Other Cameras

**Note:** Copying the OSD settings to network cameras is not available.

- 2) Select the camera (s) to be configured with the same OSD settings. You can also check ☒ Analog checkbox to select all cameras.
- 3) Click  to finish the Copy settings and back to the OSD Configuration interface.
8. Click  to apply the settings.

## 12.2 Configuring Privacy Mask

### Purpose:

Privacy mask enables you to cover certain areas on the live video to prevent certain spots in the surveillance area from being live viewed and recorded.

### Steps:

1. Enter the Privacy Mask Settings interface.  
Menu > Camera > Privacy Mask
2. Select the camera to set privacy mask.
3. Check ☒ checkbox to enable privacy mask.



Figure 12.3 Privacy Mask Settings Interface

4. Use the mouse to draw a zone on the window. The zones will be marked with different frame colors.  
**Note:** Up to 4 privacy mask zones can be configured, and the size of each area can be adjusted.
5. The configured privacy mask zones on the window can be cleared by clicking the corresponding Clear Zone1-4 icons on the right side of the window, or click **Clear All** to clear all zones.



Figure 12.4 Set Privacy Mask Area

6. You can click **Copy** to copy the privacy mask settings of the current camera to other cameras. Please refer to step 7 of *Chapter 12.1 Configuring OSD Settings*.

**Note:** Copying the privacy mask settings to network cameras is not available.

7. Click **Apply** to save the settings.

## 12.3 Configuring Video Parameters

### Steps:

1. Enter the Image Settings interface.

Menu > Camera > Image

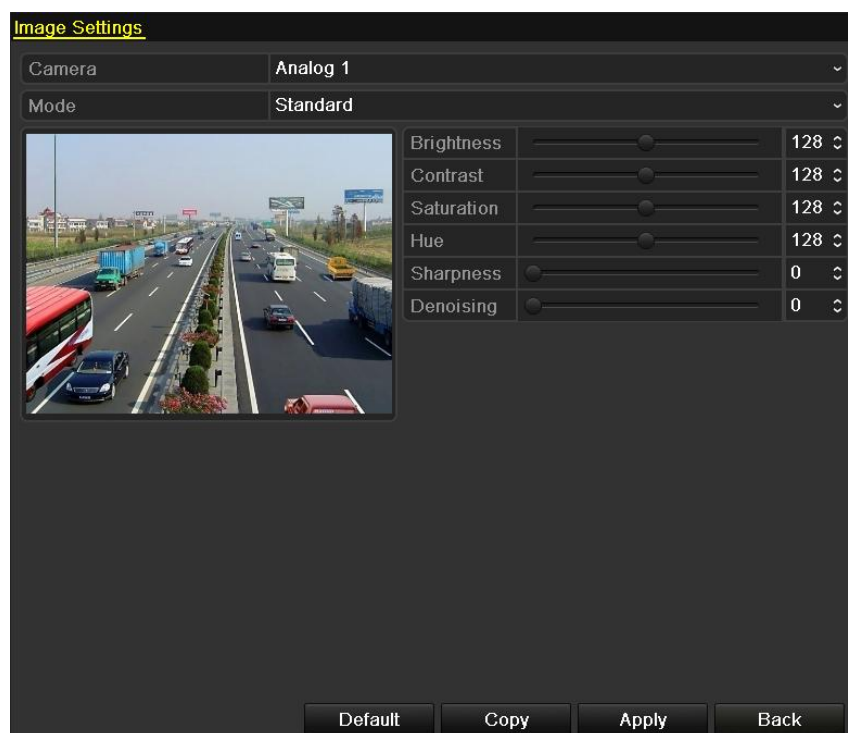


Figure 12. 5 Image Settings Interface for Analog Camera

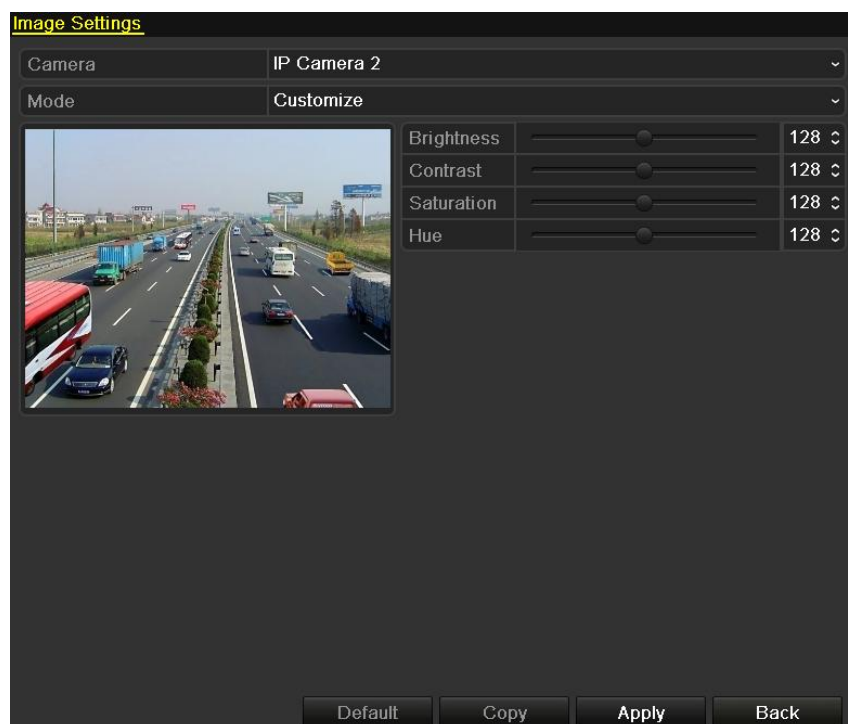


Figure 12. 6 Image Settings Interface for IPC



**Note:** IP Camera is supported by the HDVR series.

2. Select the camera to set image parameters.
3. Select the mode from the dropdown list of **Mode**. For analog cameras, four modes are selectable: Standard, Indoor, Dim Light and Outdoor. While for network cameras, only Customized is supported.
4. Adjust the image parameters according to actual needs. The parameters are including Brightness, Contrast,

Saturation, Hue, Sharpness and Denoising. You can also click **Default** to restore the default settings.

**Note:** Sharpness, Denoising and restoring default settings are not supported by network cameras.

5. You can click **Copy** to copy the image settings of the current camera to other analog cameras. Please refer to step 7 of *Chapter 12.1 Configuring OSD Settings*.

**Note:** Copying the image settings to network cameras is not available.

6. Click **Apply** to save the settings.

## **Chapter 13   Device Management and Maintenance**

## 13.1 Viewing System Information

### 13.1.1 Viewing Device Information

**Steps:**

1. Enter the System Information interface.  
Menu > Maintenance > System Info
2. Click the **Device Info** tab to enter the Device Information interface to view the device name, model, serial No. , firmware version and encoding version.

Device Info	Camera	Record	Alarm	Network	HDD
Device Name	9116				
Model	X X X X X X X X				
Serial No.	X X X X X X X X X X X X X X X X				
Firmware Version	V X.X.X				
Encoding Version	V X.X.X				

Figure 13. 1 Device Information Interface

### 13.1.2 Viewing Camera Information

**Steps:**

1. Enter the System Information interface.  
Menu > Maintenance > System Info
2. Click the **Camera** tab to enter the Camera Information interface to view the status of each camera.

**Note:** IP Camera is supported by HDVR series.

Device Info	Camera	Record	Alarm	Network	HDD	
Camera...	Camera Name	Status	Motion Det...	Tampe...	Video Loss	Video
A1	Camera 01	Enabled	Used	Not used	Not used	Used
A2	Camera 02	Enabled	Used	Not used	Not used	Used
A3	Camera 03	Enabled	Used	Not used	Not used	Used
A4	Camera 04	Enabled	Used	Not used	Not used	Used
A5	Camera 05	Enabled	Used	Not used	Not used	Used
A6	Camera 06	Enabled	Used	Not used	Not used	Used
A7	Camera 07	Enabled	Used	Not used	Not used	Used
A8	Camera 08	Enabled	Used	Not used	Not used	Used
A9	Camera 09	Enabled	Used	Not used	Not used	Used
A10	Camera 10	Enabled	Used	Not used	Not used	Used
A11	Camera 11	Enabled	Used	Not used	Not used	Used
A12	Camera 12	Enabled	Used	Not used	Not used	Used
A13	Camera 13	Enabled	Used	Not used	Not used	Used
A14	Camera 14	Enabled	Used	Not used	Not used	Used
A15	Camera 15	Enabled	Used	Not used	Not used	Used
A16	Camera 16	Enabled	Used	Not used	Not used	Used

Figure 13. 2 Camera Information Interface for DVR Series

Device Info	Camera	Record	Alarm	Network	HDD	
Camera...	Camera Name	Status	Motion Det...	Tamper...	Video Loss	Video ...
A8	Camera 08	Enabled	Used	Not used	Not used	Used
A9	Camera 09	Enabled	Used	Not used	Not used	Used
A10	Camera 10	Enabled	Used	Not used	Not used	Used
A11	Camera 11	Enabled	Used	Not used	Not used	Used
A12	Camera 12	Enabled	Used	Not used	Not used	Used
A13	Camera 13	Enabled	Used	Not used	Not used	Used
A14	Camera 14	Enabled	Used	Not used	Not used	Used
A15	Camera 15	Enabled	Used	Not used	Not used	Used
A16	Camera 16	Enabled	Used	Not used	Not used	Used
D1	IPCamera 01	Discon...	Not supported	Not su...	Not supported	Not sup...
D2	IPCamera 02	Discon...	Not supported	Not su...	Not supported	Not sup...
D3	IPCamera 03	Conne...	Used	Not used	Not used	Not sup...
D4	IPCamera 04	Discon...	Not supported	Not su...	Not supported	Not sup...
D5	IPCamera 05	Discon...	Not supported	Not su...	Not supported	Not sup...
D6	IPCamera 06	Discon...	Not supported	Not su...	Not supported	Not sup...
D7	IPCamera 07	Discon...	Not supported	Not su...	Not supported	Not sup...
D8	IPCamera 08	Discon...	Not supported	Not su...	Not supported	Not sup...

Figure 13. 3 Camera Information Interface for HDVR Series

### 13.1.3 Viewing Record Information

#### Steps:

1. Enter the System Information interface.  
Menu > Maintenance > System Info
2. Click the **Record** tab to enter the Record Information interface to view the recording status and encoding parameters of each camera.

**Note:** IP Camera is supported by HDVR series.

Device Info	Camera	Record	Alarm	Network	HDD			
Camera...	Record...	Stream...	Frame ...	Bitrate(Kbps)	Resolution	Record...	Encodi...	Redun...
A1	Used	Video ...	25fps	81/1792	704*576(4...	Manual	Event	No
A2	Not used	Video ...	25fps	84/1792	704*576(4...		Event	No
A3	Not used	Video ...	25fps	85/1792	704*576(4...		Event	No
A4	Not used	Video ...	25fps	83/1792	704*576(4...		Normal	No
A5	Not used	Video ...	25fps	83/1792	704*576(4...		Normal	No
A6	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No
A7	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No
A8	Not used	Video ...	25fps	84/1792	704*576(4...		Normal	No
A9	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No
A10	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No
A11	Not used	Video ...	25fps	83/1792	704*576(4...		Normal	No
A12	Not used	Video ...	25fps	83/1792	704*576(4...		Normal	No
A13	Not used	Video ...	25fps	84/1792	704*576(4...		Normal	No
A14	Not used	Video ...	25fps	83/1792	704*576(4...		Normal	No
A15	Not used	Video ...	25fps	82/1792	704*576(4...		Normal	No
A16	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No

Figure 13. 4 Record Information Interface for DVR Series

Device Info	Camera	<u>Record</u>	Alarm	Network	HDD			
Camera...	Record	Stream...	Frame...	Bitrate(Kbps)	Resolution	Record...	Encodi...	Redun...
A8	Not used	Video ...	25fps	84/1792	704*576(4...		Normal	No
A9	Not used	Video ...	25fps	86/1792	704*576(4...		Normal	No
A10	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No
A11	Not used	Video ...	25fps	84/1792	704*576(4...		Normal	No
A12	Not used	Video ...	25fps	84/1792	704*576(4...		Normal	No
A13	Not used	Video ...	25fps	85/1792	704*576(4...		Normal	No
A14	Not used	Video ...	25fps	83/1792	704*576(4...		Normal	No
A15	Used	Video ...	25fps	83/1792	704*576(4...	Manual	Normal	No
A16	Used	Video ...	25fps	85/1792	704*576(4...	Manual	Normal	No
D1	Not used	Video ...	25fps	2048	Unknown R...		Event	No
D2	Not used	Video ...	25fps	2048	Unknown R...		Normal	No
D3	Used	Video ...	25fps	2048	1280*720(...	Manual	Normal	No
D4	Not used	Video ...	25fps	2048	Unknown R...		Normal	No
D5	Not used	Video ...	25fps	2048	Unknown R...		Normal	No
D6	Not used	Video ...	25fps	2048	Unknown R...		Normal	No
D7	Not used	Video ...	25fps	2048	Unknown R...		Normal	No
D8	Not used	Video ...	25fps	2048	Unknown R...		Normal	No

Figure 13. 5 Record Information Interface for HDVR Series

### 13.1.4 Viewing Alarm Information

**Note:** This function is not available for DS-7200 series.

**Steps:**

1. Enter the System Information interface.  
Menu > Maintenance > System Info
2. Click the **Alarm** tab to enter the Alarm Information interface to view the alarm information.

Device Info	Camera	Record	Alarm	Network	HDD
No.	Alarm Name	Alarm Type	Alarm Status	Triggered Camer	
Local<-1		N.C	Occur	D3~D4 D7	
Local<-2		N.O	Used		
Local<-3		N.O	Used		
Local<-4		N.O	Used		
Local<-5		N.O	Used		
Local<-6		N.C	Occur	D3~D4 D7	
Local<-7		N.O	Used		
Local<-8		N.O	Used		
Local<-9		N.O	Used		
Local<-10		N.C	Occur		
Local<-11		N.C	Occur		
Local<-12		N.O	Used		
Local<-13		N.O	Used		
Local<-14		N.O	Used		
Local<-15		N.O	Used		

Figure 13. 6 Alarm Information Interface

### 13.1.5 Viewing Network Information

**Steps:**

1. Enter the System Information interface.

Menu > Maintenance > System Info

2. Click the **Network** tab to enter the Network Information interface to view the network information.

Device Info	Camera	Record	Alarm	Network	HDD
NIC	bond0				
IPv4 Address	172.6.21.110				
IPv4 Subnet Mask	255.255.255.0				
IPv4 Default Gateway	172.6.21.1				
IPv6 Address 1	fe80::240:48ff:fe72:cc85/64				
IPv6 Address 2					
IPv6 Default Gateway					
Preferred DNS Server	192.0.0.200				
Alternate DNS Server	0.0.0.0				
Enable DHCP	Disabled				
Enable PPPOE	Disabled				
PPPOE Address					
PPPOE Subnet Mask					
PPPOE Default Gateway					
Main NIC	LAN1				

Figure 13. 7 Network Information Interface

## 13.1.6 Viewing HDD Information

*Steps:*

1. Enter the System Information interface.  
Menu > Maintenance > System Info
2. Click the **HDD** tab to enter the HDD Information menu to view the HDD status, free space, property, etc.

Device Info	Camera	Record	Alarm	Network	<u>HDD</u>	
Label	Status	Capacity	Free Space	Property	Type	Group
1	Normal	100GB	97,280MB	R/W	Local	2
2	Normal	200GB	199GB	R/W	Local	1

Figure 13. 8 HDD Information Interface

## 13.2 Searching & Exporting Log Files

### *Purpose:*

The operation, alarm, exception, information and running status of the device can be stored in log files, which can be viewed and exported at any time.

### *Steps:*

1. Enter the Log Search interface.

Menu > Maintenance > Log Information>Log Search



Figure 13. 9 Log Search Interface

2. Set the log search conditions to refine your search, including the Start Time, End Time, Major Type and Minor Type.
3. Click **Search** to start searching log files.
4. The matched log files will be displayed on the list shown below.

**Note:** Up to 2000 log files can be displayed each time.

Log Search



Log Export

Start Time	05-30-2012		00:00:00	
End Time	05-30-2012		23:59:59	
Major Type	All			
Minor Type	All			

No.	Major Type	Time	Minor Type	Paramet...	Play	Details
1	Operation	05-30-2012 08:43:08	Power On	N/A	—	
2	Alarm	05-30-2012 08:43:08	Alarm Input	N/A	—	
3	Alarm	05-30-2012 08:43:08	Alarm Input	N/A	—	
4	Alarm	05-30-2012 08:43:08	Alarm Input	N/A	—	
5	Alarm	05-30-2012 08:43:08	Alarm Input	N/A	—	
6	Operation	05-30-2012 08:43:11	Local Operation:...	N/A	—	
7	Operation	05-30-2012 08:43:11	Local Operation:...	N/A	—	
8	Alarm	05-30-2012 08:43:16	Start Motion Det...	N/A		
9	Alarm	05-30-2012 08:43:55	Stop Motion Det...	N/A		
10	Alarm	05-30-2012 08:43:57	Start Motion Det...	N/A		
11	Alarm	05-30-2012 08:44:11	Stop Motion Det...	N/A		
12	Alarm	05-30-2012 08:44:13	Start Motion Det...	N/A		
13	Alarm	05-30-2012 08:44:32	Stop Motion Det...	N/A		

Total: 352 P: 1/4

Figure 13. 10 Log Search Results

5. You can click  of each log or double-click the log to view its detailed information. And you can also click the  button to view the related video files if available.

Log Information	
Time	05-30-2012 08:52:42
Type	Alarm--Start Motion Detection
Local User	N/A
Host IP Address	N/A
Parameter Type	N/A
Camera No.	A16
Description:	N/A
<div>Previous</div> <div>Next</div> <div>OK</div>	

Figure 13. 11 Log Details

6. If you want to export the log files, select the log and click **Export** to enter the Export interface.
7. You can also export all the log files stored in the HDD. Enter the Log Export interface.
- Menu > Maintenance > Log Information>Log Export



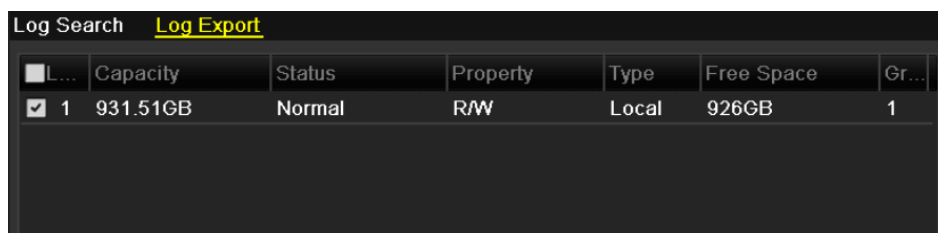


Figure 13.12 Log Export Interface

Check ☒ checkbox to select the HDD and click **Export** to enter the export interface.

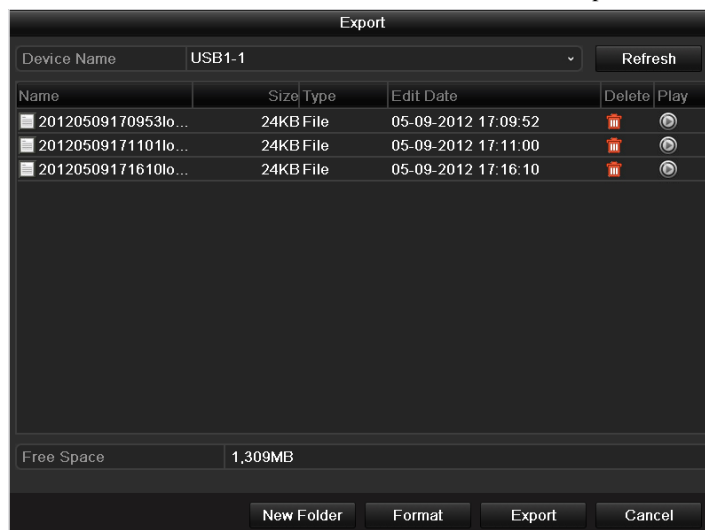


Figure 13.13 Export Log Files

8. Select the backup device from the dropdown list of **Device Name**.

9. Click **Export** to export the log files to the selected backup device.

You can click **New Folder** to create new folder in the backup device, or click **Format** to format the backup device before log export.

**Note:**

- 1) Please connect the backup device to device before operating log export.
- 2) The log files exported to the backup device are named by exporting time, e.g., *20120514124841logBack.txt*.

## 13.3 Importing/Exporting Configuration Files

### *Purpose:*

The configuration files of the device can be exported to local device for backup; and the configuration files of one device can be imported to multiple device devices if they are to be configured with the same parameters.

### *Steps:*

1. Enter the Import/Export Configuration File interface.

Menu > Maintenance > Import/Export



Figure 13. 14 Import/Export Config File

2. Click **Export** to export configuration files to the selected local backup device.
3. To import a configuration file, select the file from the selected backup device and click **Import**. After the import process is completed, you must reboot the device.

**Note:** After having finished the import of configuration files, the device will reboot automatically.

## 13.4 Upgrading System

### *Purpose:*

The firmware on your device can be upgraded by local backup device or remote FTP server.

### 13.4.1 Upgrading by Local Backup Device

#### *Steps:*

1. Connect your device with a local backup device where the update firmware file is located.
2. Enter the Upgrade interface.  
Menu > Maintenance > Upgrade
3. Click the **Local Upgrade** tab to enter the local upgrade menu.

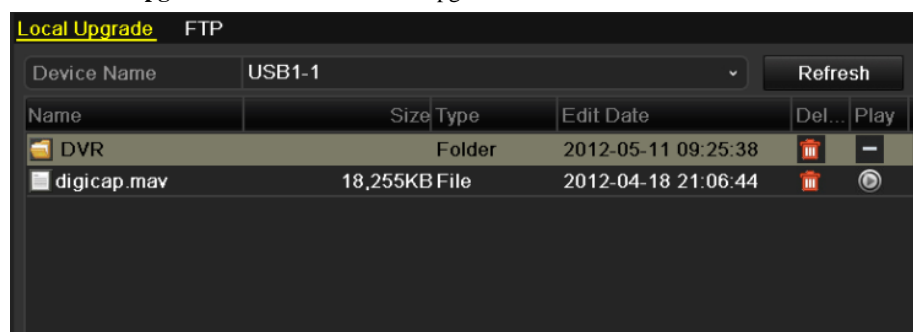


Figure 13. 15 Local Upgrade Interface

4. Select the update file from the backup device.
5. Click **Upgrade** to start upgrading.
6. After the upgrading is complete, reboot the device to activate the new firmware.

### 13.4.2 Upgrading by FTP

#### *Before you start:*

Configure PC (running FTP server) and device to the same Local Area Network. Run the 3<sup>rd</sup>-party TFTP software on the PC and copy the firmware into the root directory of TFTP.

#### *Steps:*

1. Enter the Upgrade interface.  
Menu > Maintenance > Upgrade
2. Click the **FTP** tab to enter the local upgrade interface, as shown in Figure 13.16.

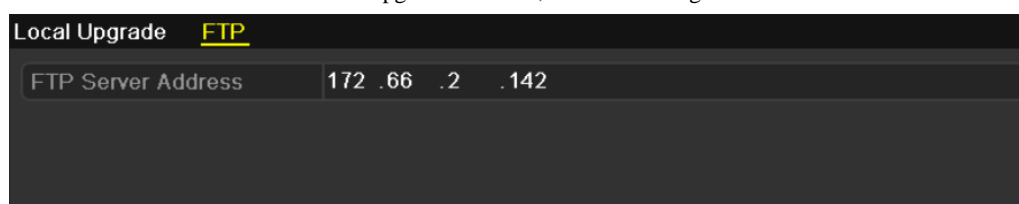


Figure 13. 16 FTP Upgrade Interface

3. Enter the FTP Server Address in the text field.
4. Click **Upgrade** to start upgrading.
5. After the upgrading is complete, reboot the device to activate the new firmware.

## 13.5 Restoring Default Settings

*Steps:*

1. Enter the Default interface.

Menu > Maintenance > Default

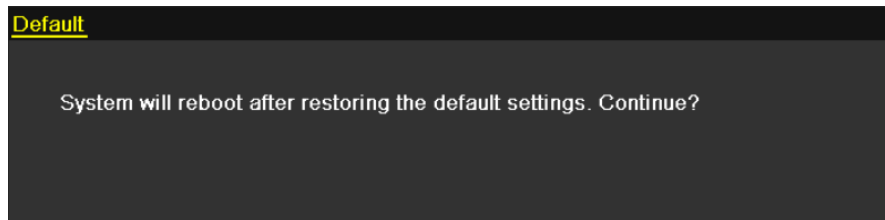



Figure 13. 17 Restore Default Settings

2. Click  to restore the default settings.

**Note:** Except the network parameters (including IP address, subnet mask, gateway, MTU, NIC working mode, default route and server port), all other parameters of the device will be restored to factory default settings.

## **Chapter 14 Others**

## 14.1 Configuring RS-232 Serial Port

### *Purpose:*

The RS-232 port can be used in two ways:


- **Parameters Configuration:** Connect a PC to the device through the PC serial port. Device parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as the device's when connecting with the PC serial port.
- **Transparent Channel:** Connect a serial device directly to the device. The serial device will be controlled remotely by the PC through the network.

**Note:** RS-232 serial port is not available for DS-7200HFI(HWI)-SV & 7600HI-ST series.

### *Steps:*

1. Enter the RS-232 Settings interface.

Menu > Configuration > RS-232



The screenshot displays the 'RS-232 Settings' interface. It features a title bar with the text 'RS-232 Settings' in yellow. Below the title bar is a table with two columns: the parameter name and its current value. Each row has a small downward arrow on the right side, indicating that the values are configurable. The parameters and their values are: Baud Rate (115200), Data Bit (8), Stop Bit (1), Parity (None), Flow Ctrl (None), and Usage (Console).

RS-232 Settings	
Baud Rate	115200
Data Bit	8
Stop Bit	1
Parity	None
Flow Ctrl	None
Usage	Console

Figure 14. 1 RS-232 Settings Interface

2. Configure RS-232 parameters, including baud rate, data bit, stop bit, parity, flow control and usage.
3. Click **Apply** to save the settings.

## 14.2 Configuring General Settings

### Purpose:

You can configure the BNC output standard, VGA output resolution, mouse pointer speed, etc.

### Steps:

1. Enter the General Settings interface.  
Menu > Configuration > General
2. Select the **General** tab.

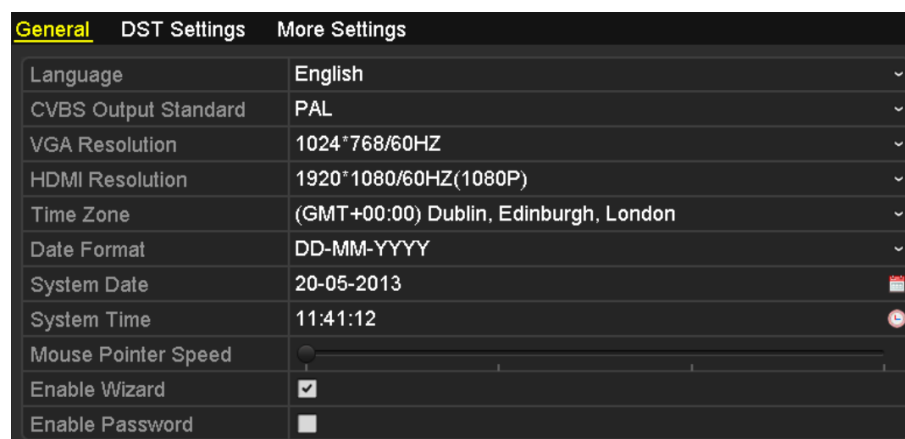


Figure 14. 2 General Settings Interface of Other Series

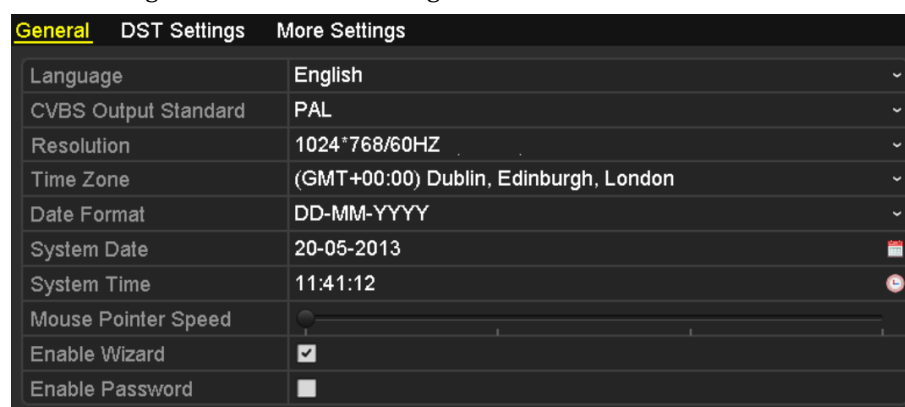


Figure 14. 3 General Settings Interface of 9100/9000/8100/8000HWI-ST & 7200HFI(HWI)-SV & 7600HI-ST Series

3. Configure the following settings:
  - **Language:** The default language used is *English*.
  - **CVBS Output Standard:** Select the CVBS output standard to NTSC or PAL, which must be the same with the video input standard.
  - **VGA Resolution (for HFI-ST series):** Select the VGA output resolution, which must be the same with the resolution of the monitor screen.
  - **HDMI Resolution (for HFI-ST series):** Select the HDMI resolution, which must be the same with the resolution of the monitor screen.
  - **Resolution (for other series):** Select the resolution for the VGA and HDMI output, which must be the same with the resolution of the monitor screen.



**Note:** For DS-9100/9000/8100/8000HFI-ST & 9100/9000HFI-RT/XT series device, individual operation and settings can be achieved on VGA output and HDMI output.

- **Time Zone:** Select the time zone.
  - **Date Format:** Select the date format.
  - **System Date:** Select the system date.
  - **System Time:** Select the system time.
  - **Mouse Pointer Speed:** Set the speed of mouse pointer; 4 levels are configurable.
  - **Enable Wizard:** Enable/disable the Wizard when the device starts up.
  - **Enable Password:** Enable/disable the use of the login password.
4. Click **Apply** to save the settings.

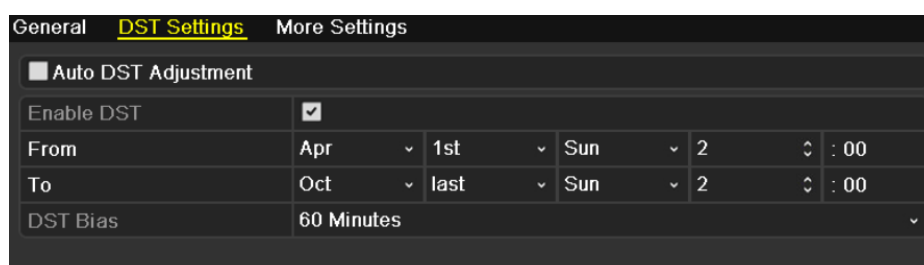
## 14.3 Configuring DST Settings

### Steps:

1. Enter the General Settings interface.

Menu >Configuration>General

2. Choose **DST Settings** tab.



General		<b>DST Settings</b>		More Settings	
<input type="checkbox"/> Auto DST Adjustment					
Enable DST	<input checked="" type="checkbox"/>				
From	Apr	1st	Sun	2	: 00
To	Oct	last	Sun	2	: 00
DST Bias	60 Minutes				

Figure 14. 4 DST Settings Interface

You can check ☒ checkbox before the **Auto DST Adjustment** item.

Or you can manually check the **Enable DST** checkbox, and then you choose the date of the DST period.

## 14.4 Configuring More Settings

### Steps:

1. Enter the General Settings interface.  
Menu > Configuration > General
2. Click the **More Settings** tab to enter the More Settings interface.

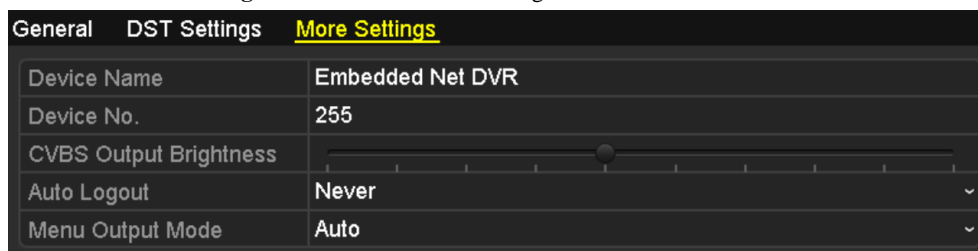


Figure 14. 5 More Settings Interface

3. Configure the following settings:
  - **Device Name:** Edit the name of device.
  - **Device No.:** Edit the serial number of device. The Device No. can be set in the range of 1~255, and the default No. is 255.
  - **CVBS Output Brightness:** Adjust the video output brightness.
  - **Auto Logout:** Set timeout time for menu inactivity. E.g., when the time is set to *5 Minutes*, then the system will exit from the current operation menu to live view screen after 5 minutes of menu inactivity.
  - **Menu Output Mode:** Set the menu output mode as Auto, HDMI, VGA or Main CVBS. E.g., when VGA is selected and VGA output interface is connected, then the menu will be displayed on VGA monitor.

**Note:** For 9100/9000/8100/8000HWI-ST & 7200HFI(HWI)-SV & 7600HI-ST series, Auto, HDMI/VGA and Main CVBS are selectable for Menu Output Mode.
4. Click **Apply** to save the settings.

## 14.5 Managing User Accounts

### *Purpose:*

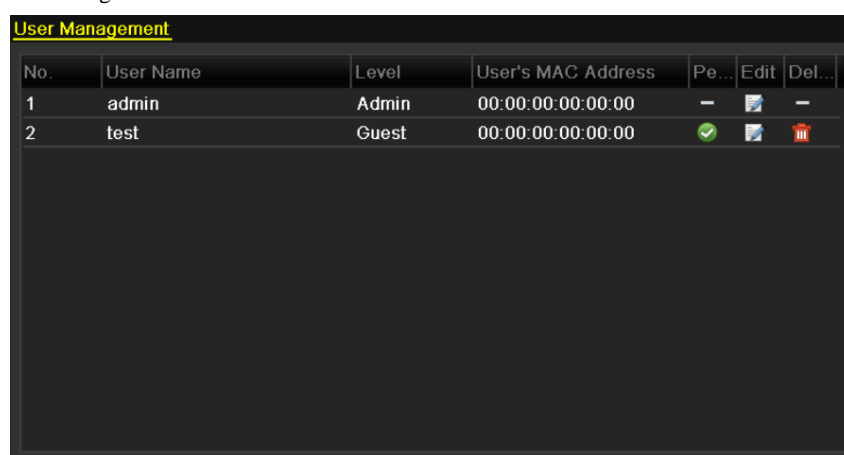
There is a default account in the device: *Administrator*. The *Administrator* user name is *admin* and the password is *12345*. The *Administrator* has the permission to add and delete user and configure user parameters.

### 14.5.1 Adding a User

#### *Steps:*

1. Enter the User Management interface.

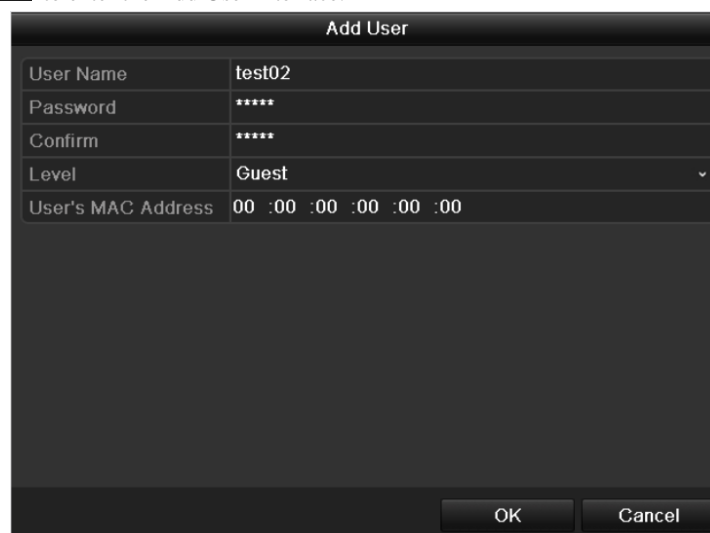
Menu > Configuration > User

A screenshot of the 'User Management' interface. It features a table with columns: No., User Name, Level, User's MAC Address, Pe..., Edit, and Del... The table contains two rows: row 1 for 'admin' with level 'Admin' and MAC '00:00:00:00:00:00', and row 2 for 'test' with level 'Guest' and MAC '00:00:00:00:00:00'. The 'test' row has a green checkmark in the 'Pe...' column and icons in the 'Edit' and 'Del...' columns. Below the table is a large empty rectangular area.

No.	User Name	Level	User's MAC Address	Pe...	Edit	Del...
1	admin	Admin	00:00:00:00:00:00	—		—
2	test	Guest	00:00:00:00:00:00	✓		

Figure 14. 6 User Management Interface

2. Click **Add** to enter the Add User interface.

A screenshot of the 'Add User' dialog box. It contains several input fields: 'User Name' with 'test02', 'Password' with '\*\*\*\*\*', 'Confirm' with '\*\*\*\*\*', 'Level' with a dropdown menu showing 'Guest', and 'User's MAC Address' with '00 :00 :00 :00 :00 :00'. At the bottom are 'OK' and 'Cancel' buttons.


Add User	
User Name	test02
Password	*****
Confirm	*****
Level	Guest
User's MAC Address	00 :00 :00 :00 :00 :00

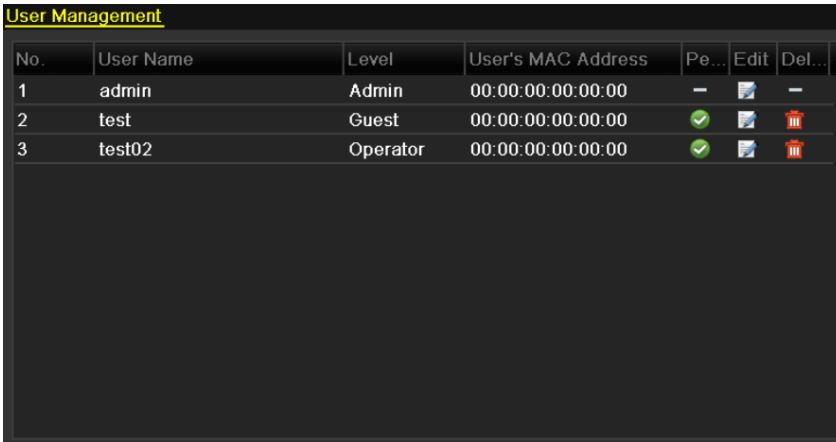
Figure 14. 7 Add User Menu

3. Enter the information for new user, including **User Name**, **Password**, **Level** and **User's MAC Address**.  
**Level:** Set the user level to Operator or Guest. Different user levels have different operating permission.

- **Operator:** The *Operator* user level has permission of Local Log Search in Local Configuration, Remote Log Search and Two-way Audio in Remote Configuration and all operating permission in Camera Configuration.
- **Guest:** The *Guest* user has permission of Local Log Search in Local Configuration, Remote Log Search in Remote Configuration and only has the local/remote playback in the Camera Configuration.

**User's MAC Address:** The MAC address of the remote PC which logs onto the device. If it is configured and enabled, it only allows the remote user with this MAC address to access the device.

4. Click  to save the settings and go back to the User Management interface. The added new user will be displayed on the list.










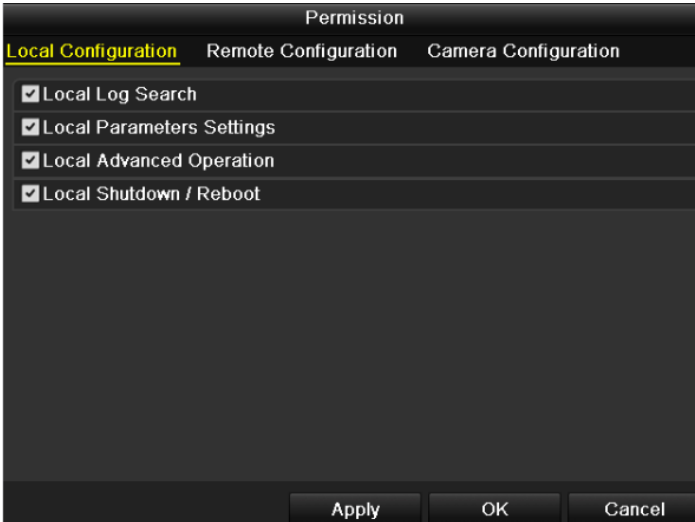
No.	User Name	Level	User's MAC Address	Pe...	Edit	Del...
1	admin	Admin	00:00:00:00:00:00	—		—
2	test	Guest	00:00:00:00:00:00			
3	test02	Operator	00:00:00:00:00:00			

Figure 14. 8 Added User Listed in User Management Interface

5. Select the user from the list and then click the  button to enter the Permission Settings interface.



Permission

Local Configuration   Remote Configuration   Camera Configuration

- ☒ Local Log Search
- ☒ Local Parameters Settings
- ☒ Local Advanced Operation
- ☒ Local Shutdown / Reboot

Apply   OK   Cancel

Figure 14. 9 User Permission Settings Interface for DVR Series

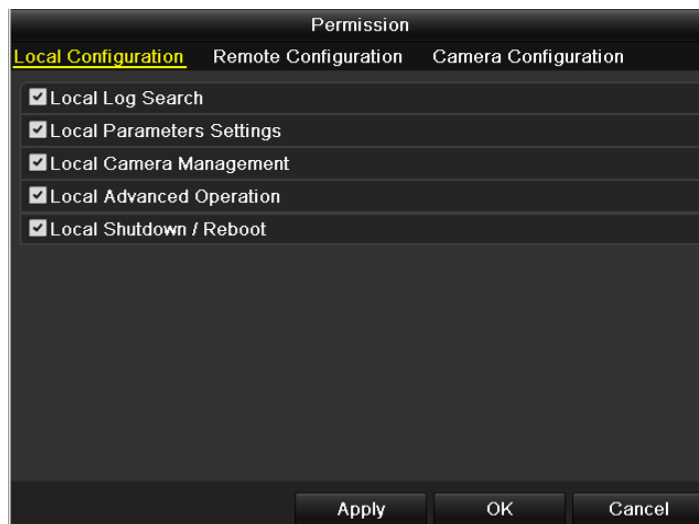


Figure 14.10 User Permission Settings Interface for HDVR Series

**Note:** Local Camera Management is supported by HDVR series.

6. Set the operating permission of Local Configuration, Remote Configuration and Camera Configuration for the user.

#### Local Configuration


- Local Log Search: Searching and viewing logs and system information of device.
- Local Parameters Settings: Configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Local Camera Management: Enabling and disabling analog camera (s). Adding, deleting and editing of network camera (s). This function is supported by HDVR series.
- Local Advanced Operation: Operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Local Shutdown /Reboot: Shutting down or rebooting the device.

#### Remote Configuration

- Remote Log Search: Remotely viewing logs that are saved on the device.
- Remote Parameters Settings: Remotely configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Remote Camera Management: Remotely enabling and disabling analog camera (s), and adding, deleting and editing of network camera (s). This function is supported by HDVR series.
- Remote Serial Port Control: Configuring settings for RS-232 and RS-485 ports.
- Remote Video Output Control: Sending remote control panel signal.
- Two-way Audio: Realizing two-way radio between the remote client and the device.
- Remote Alarm Control: Remotely arming (notify alarm and exception message to the remote client) and controlling the alarm output.
- Remote Advanced Operation: Remotely operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Remote Shutdown/Reboot: Remotely shutting down or rebooting the device.

#### Camera Configuration

- Remote Live View: Remotely viewing live video of the selected camera (s).
- Local Manual Operation: Locally starting/stopping manual recording, picture capturing and alarm output of the selected camera (s).
- Remote Manual Operation: Remotely starting/stopping manual recording, picture capturing and alarm output of the selected camera (s).

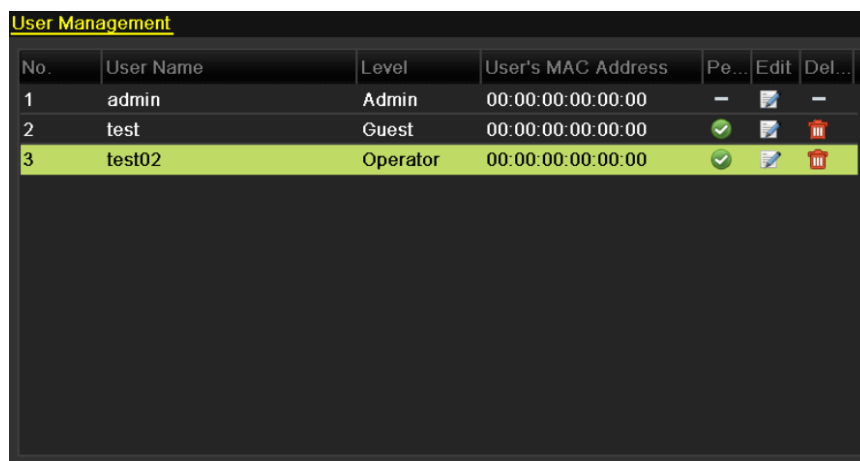
- Local Playback: Locally playing back recorded files of the selected camera (s).
  - Remote Playback: Remotely playing back recorded files of the selected camera (s).
  - Local PTZ Control: Locally controlling PTZ movement of the selected camera (s).
  - Remote PTZ Control: Remotely controlling PTZ movement of the selected camera (s).
  - Local Video Export: Locally exporting recorded files of the selected camera (s).
7. Click  to save the settings and exit interface.

**Note:** Only the *admin* user account has the permission of restoring factory default parameters.

## 14.5.2 Deleting a User

### Steps:

1. Enter the User Management interface.  
Menu > Configuration > User
2. Select the user to be deleted from the list.










No.	User Name	Level	User's MAC Address	Pe...	Edit	Del...
1	admin	Admin	00:00:00:00:00:00	—		—
2	test	Guest	00:00:00:00:00:00			
3	test02	Operator	00:00:00:00:00:00			

Figure 14. 11 Delete a User

3. Click  to delete the selected user.

## 14.5.3 Editing a User

### Steps:

1. Enter the User Management interface.  
Menu > Configuration > User
2. Select the user to be edited from the list.

**User Management**

No.	User Name	Level	User's MAC Address	Pe...	Edit	Del...
1	admin	Admin	00:00:00:00:00:00	—		—
2	test	Guest	00:00:00:00:00:00			
3	test02	Operator	00:00:00:00:00:00			

Figure 14. 12 Edit a User

3. Click to enter the Edit User interface.

**Edit User**

User Name	test
Change Password	<input checked="" type="checkbox"/>
Password	*****
Confirm	*****
Level	Operator ▾
User's MAC Address	00 :00 :00 :00 :00 :00

Apply OK Cancel

Figure 14. 13 Edit User Interface

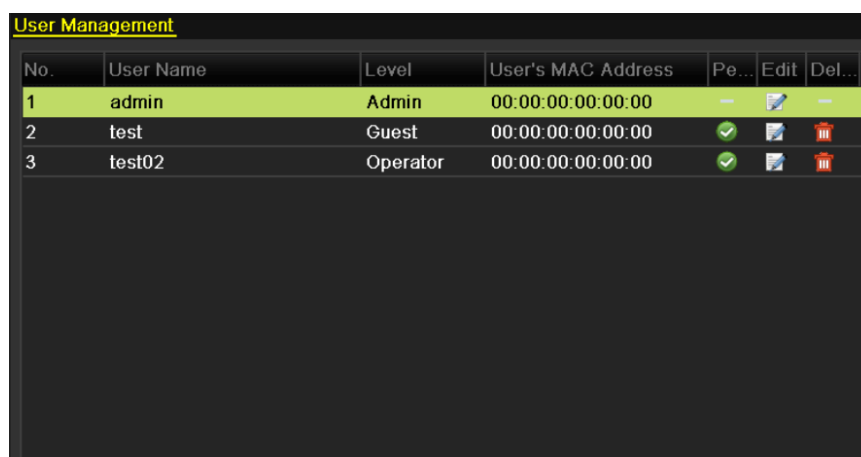
4. Edit the user information, including user name, password, level and MAC address.
- Note:** If you want to change the password of the user, check ☒ checkbox to enable changing the password.
5. Click to save the settings and exit the menu.

## 14.5.4 Changing Password of Admin

### Steps:

- Enter the User Management interface.  
Menu > Configuration > User






The screenshot shows a 'User Management' window with a table containing three users. The first user, 'admin', is highlighted in yellow. The table has columns for No., User Name, Level, User's MAC Address, and three action buttons: Pe..., Edit, and Del....

No.	User Name	Level	User's MAC Address	Pe...	Edit	Del...
1	admin	Admin	00:00:00:00:00:00	—		—
2	test	Guest	00:00:00:00:00:00	✓		
3	test02	Operator	00:00:00:00:00:00	✓		

Figure 14. 14 Change Password

2. Select the *admin* user and click  to change the password.




The 'Edit User' dialog box contains fields for User Name, Old Password, Change Password (with a checkbox), Password, Confirm, and User's MAC Address. At the bottom are buttons for Apply, OK, and Cancel.

User Name	admin
Old Password	
Change Password	<input type="checkbox"/>
Password	
Confirm	
User's MAC Address	00 :00 :00 :00 :00 :00

Apply OK Cancel

Figure 14. 15 Change Password

3. Enter the old password, check ☒ checkbox, enter new password and confirm password on the menu.
4. Click  to save the settings and exit the menu.

## 14.6 Logging out/Shutting down/Rebooting Device

**Steps:**

1. Enter the Shutdown interface.

Menu > Shutdown

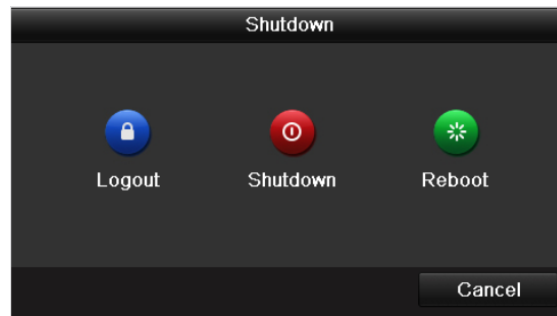




Figure 14. 16 Shutdown Menu

2. Click  to log out, or

Click  to shut down the device, or

Click  to reboot the device.

**Note:** After you have logged out the system, menu operation on the screen is invalid. It is required a user name and password to log in to the system.

## **Chapter 15    Appendix**

## Glossary

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the device, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
- **DVR:** Acronym for Digital Video Recorder. A DVR is device that is able to accept video signals from analog cameras, compress the signal and store it on its hard drives.
- **HDD:** Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces.
- **DHCP:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
- **HTTP:** Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
- **PPPoE:** PPPoE, Point-to-Point Protocol over Ethernet, is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks.
- **DDNS:** Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
- **Hybrid DVR:** A hybrid DVR is a combination of a DVR and NVR.
- **NTP:** Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
- **NTSC:** Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of an NTSC signal contains 525 scan lines at 60Hz.
- **NVR:** Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
- **PAL:** Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz.
- **PTZ:** Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
- **USB:** Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.

# Troubleshooting

- **No image displayed on the monitor after the device is starting up normally.**

## *Possible Reasons*

- a) No VGA or HDMI connections.
- b) Connection cable is damaged.
- c) Input mode of the monitor is incorrect.

## *Steps*

1. Verify the device is connected with the monitor via HDMI or VGA cable.  
If not, please connect the device with the monitor and reboot.
2. Verify the connection cable is good.  
If there is still no image display on the monitor after rebooting, please check if the connection cable is good, and change a cable to connect again.
3. Verify Input mode of the monitor is correct.  
Please check the input mode of the monitor matches with the output mode of the device (e.g. if the output mode of DVR is HDMI output, then the input mode of monitor must be the HDMI input). And if not, please modify the input mode of monitor.
4. Check if the fault is solved by the step 1 to step 3.  
If it is solved, finish the process.  
If not, please contact the engineer from our company to do the further process.

- **There is an audible warning sound “Di-Di-Di-Di” after a new bought device starts up.**

## *Possible Reasons*

- a) No HDD is installed in the device.
- b) The installed HDD has not been initialized.
- c) The installed HDD is not compatible with the device or is broken-down.

## *Steps*

1. Verify at least one HDD is installed in the device.
  - 1) If not, please install the compatible HDD.  
**Note:** Please refer to the “Quick Operation Guide” for the HDD installation steps.
2. Verify the HDD is initialized.
  - 1) Select “Menu>HDD>General”.
  - 2) If the status of the HDD is “Uninitialized”, please check the checkbox of corresponding HDD and click the “Init” button.
3. Verify the HDD is detected or is in good condition.
  - 1) Select “Menu>HDD>General”.
  - 2) If the HDD is not detected or the status is “Abnormal”, please replace the dedicated HDD according to the requirement.
4. Check if the fault is solved by the step 1 to step 3.
  - 1) If it is solved, finish the process.

- 2) If not, please contact the engineer from our company to do the further process.

- **The status of the added IPC displays as “Disconnected” when it is connected through the protocol of our company. Select “Menu>Camera>Camera>IP Camera” to get the camera status.**

**Possible Reasons**

- a) Network failure, and the DVR and IPC lost connections.
- b) The configured parameters are incorrect when adding the IPC.
- c) Insufficient bandwidth.

**Steps**

1. Verify the network is connected.
  - 1) Connect the HDVR and PC with the RS-232 cable.
  - 2) Open the Super Terminal software, and execute the ping command. Input “ping IP” (e.g. ping 172.6.22.131).

**Note:** Simultaneously press **Ctrl** and **C** to exit the ping command.

If there exists return information and the time value is little, the network is normal.

2. Verify the configuration parameters are correct.
  - 1) Select “Menu>Camera>Camera>IP Camera”.
  - 2) Verify the following parameters are the same with those of the connected IP devices, including IP address, protocol, management port, user name and password.
3. Verify the whether the bandwidth is enough.
  - 1) Select “Menu >Maintenance > Net Detect > Network Stat.”.
  - 2) Check the usage of the access bandwidth, and see if the total bandwidth has reached its limit.
4. Check if the fault is solved by the step 1 to step 3.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

- **The IPC frequently goes online and offline and the status of it displays as “Disconnected”.**

**Possible Reasons**

- a) The IPC and the HDVR versions are not compatible.
- b) Unstable power supply of IPC.
- c) Unstable network between IPC and HDVR.
- d) Limited flow by the switch connected with IPC and HDVR.

**Steps**

1. Verify the IPC and the HDVR versions are compatible.
  - 1) Enter the IPC Management interface “Menu > Camera > Camera>IP Camera”, and view the firmware version of connected IPC.
  - 2) Enter the System Info interface “Menu>Maintenance>System Info>Device Info”, and view the firmware version of HDVR.
2. Verify power supply of IPC is stable.
  - 1) Verify the power indicator is normal.
  - 2) When the IPC is offline, please try the ping command on PC to check if the PC connects with the IPC.
3. Verify the network between IPC and HDVR is stable.
  - 1) When the IPC is offline, connect PC and HDVR with the RS-232 cable.

- 2) Open the Super Terminal, use the ping command and keep sending large data packages to the connected IPC, and check if there exists packet loss.

**Note:** Simultaneously press **Ctrl** and **C** to exit the ping command.

**Example:** Input ping 172.6.22.131 -l 1472 -f.

4. Verify the switch is not flow control.

Check the brand, model of the switch connecting IPC and HDVR, and contact with the manufacturer of the switch to check if it has the function of flow control. If so, please turn it down.

5. Check if the fault is solved by the step 1 to step 4.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

- **When there is no monitor connected to the HDVR and you add the IPC via web browser, the IPC status shows as Connected; and then you connect the HDVR with the monitor via VGA or HDMI interface and reboot the device, there is black screen with the mouse cursor.**

**Connect the HDVR with the monitor before startup via VGA or HDMI interface, and manage the IPC to connect with the device locally or remotely, the status of IPC displays as Connected. And then connect the device with the CVBS, and there is black screen either.**

**Possible Reasons:**

After connecting the IPC to the HDVR, the image is output via the main spot interface by default.

**Steps:**

1. Enable the output channel.
2. Select "Menu > Configuration > Live View > View", and select video output interface in the drop-down list and configure the window you want to view.

**Notes:**

- 1) The view settings can only be configured by the local operation of HDVR.
- 2) Different camera orders and window-division modes can be set for different output interfaces separately, and digits like "D1" and "D2" stands for the channel number, and "X" means the selected window has no image output.
3. Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

- **Live view stuck when video outputs locally.**

**Possible Reasons:**

- a) Poor network between device and IPC, and there exists packet loss during the transmission.
- b) The frame rate has not reached the real-time frame rate.

**Steps:**

1. Verify the network between device and IPC is connected.
  - 1) When image is stuck, connect the RS-232 ports on PC and the rear panel of device with the RS-232 cable.
  - 2) Open the Super Terminal, and execute the command of "**ping 192.168.0.0 -l 1472 -f**" (the IP address may change according to the real condition), and check if there exists packet loss.

**Note:** Simultaneously press **Ctrl** and **C** to exit the ping command.

2. Check the parameters of Main Stream (Continuous) and Main Stream (Event).

Select "Menu > Record > Parameters > Record", and set the resolution of Main Stream (Event) the same as the one of Main Stream (Continuous).

3. Verify the frame rate is real-time frame rate.

Select “Menu > Record > Parameters > Record”, and set the Frame rate to Full Frame.

4. Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

- **When using the device to get the live view audio, there is no sound or there is too much noise, or the volume is too low.**

**Possible Reasons:**

- a) Cable between the pickup and camera is not connected well; impedance mismatches or incompatible.
- b) The stream type is not set as “Video & Audio”.
- c) The encoding standard is not supported with device.

**Steps:**

1. Verify the cable between the pickup and camera is connected well; impedance matches and compatible.
2. Verify the setting parameters are correct.

Select “Menu > Record > Parameters > Record”, and set the Stream Type as “Audio & Video”.

3. Verify the audio encoding standard of the camera is supported by the HDVR.

HDVR supports G722.1 and G711 standards, and if the encoding parameter of the input audio is not one of the previous two standards, you can log in the IPC to configure it to the supported standard.

4. Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

- **The image gets stuck when HDVR is playing back by single or multi-channel IPC.**

**Possible Reasons:**

- a) Poor network between HDVR and IPC, and there exists packet loss during the transmission.
- b) The frame rate is not the real-time frame rate.
- c) The HDVR supports up to 16-channel synchronize playback at the resolution of 4CIF, if you want a 16-channel synchronize playback at the resolution of 720p, the frame extracting may occur, which leads to a slight stuck.

**Steps:**

1. Verify the network between HDVR and IPC is connected.

- 1) When image is stuck, connect the RS-232 ports on PC and the rear panel of HDVR with the RS-232 cable.

- 2) Open the Super Terminal, and execute the command of “**ping 192.168.0.0 -l 1472 -f**” (the IP address may change according to the real condition), and check if there exists packet loss.

**Note:** Simultaneously press the **Ctrl** and **C** to exit the ping command.

2. Verify the frame rate is real-time frame rate.

Select “Menu > Record > Parameters > Record”, and set the Frame Rate to “Full Frame”.

3. Verify the hardware can afford the playback.

Reduce the channel number of playback.

Select “Menu > Record > Encoding > Record”, and set the resolution and bitrate to a lower level.

4. Reduce the number of local playback channel.

Select “Menu > Playback”, and uncheck the checkbox of unnecessary channels.

5. Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.



- **No record file found in the device local HDD, and the prompt “No record file found” pops up when you search the record files.**

***Possible Reasons:***

- a) The time setting of system is incorrect.
- b) The search condition is incorrect.
- c) The HDD is error or not detected.

***Steps:***

1. Verify the system time setting is correct.  
Select “Menu > Configuration > General > General”, and verify the “Device Time” is correct.
2. Verify the search condition is correct.  
Select “Playback”, and verify the channel and time are correct.
3. Verify the HDD status is normal.  
Select “Menu > HDD > General” to view the HDD status, and verify the HDD is detected and can be read and written normally.
4. Check if the fault is solved by the above steps.  
If it is solved, finish the process.  
If not, please contact the engineer from our company to do the further process.

# Summary of Changes

## Version 2.3.3

### Added

1. Support smart search for network cameras. (Chapter 6.2.2)
2. Support connecting the third-party network cameras from Brickcom and Bosch. (Appendix-List of IP Cameras Compatible)

### Updated

1. Optimize the method for adding encoders. (Chapter 2.2.1)

## Version 2.3.0

### Added

1. Support remote reverse playback by RTSP. (Feature)
2. Support accessing by the platform by ONVIF. (Feature)
3. Support triggering record via the platform when the device accessed via the platform. (Feature)
4. Support playing back the record files stored in external storage devices. (Chapter 6.1.6)
5. Support remote web browser access by HTTPS with high security. (Chapter 9.2.11)
6. Support high-speed download function for speeding up the remote download of record files via IE browser or CMS software. (Chapter 9.2.12)
7. Support one-touch initialization when there is uninitialized HDD existed in the device during the device starts up. (Chapter 11.1)
8. Support searching the available NAS directories after configuring the IP address of the NAS disk. (Chapter 11.2)

### Updated

1. The interval between two capturing actions can be set as 1s, 2s, 3s, 4s, 5s, 10min, 30min, 1h, 12h and 24h. (Chapter 5.1)
2. Provide new playback interface with easy and flexible operation. (Chapter 6)
3. Support quick exporting the record file of all the channels. (Chapter 7.1.1)
4. The 8100/8000 series devices support 2 self-adaptive 10M/100M/1000M network interfaces, and three working modes configurable: multi-address, load balance, network fault tolerance. (Chapter 9.1)
5. Captured pictures can be sent to the FTP server which supports FTP and SFTP protocol, and two FTP servers can be configured and the directory name can be customized (this feature is supported by DS-9100/8100HFI-ST (HWI-ST) & DS-9100HFI-RT/XT series). (Chapter 9.2.4)
6. UPnP™ settings support manual and automatic port mapping modes. (Chapter 9.2.6)

### Deleted

1. Delete the function of synchronizing the default settings of the device for the added network camera.

# List of IP Cameras Compatible

**Note:** The following contents are only available for HDVR series.

## List of Hikvision IP Cameras Compatible

**Note:** For the list, our company holds right to interpret.

Type	Model	Version	Max. Resolution	Sub-stream	Audio
HD Network Camera	DS-2CD883F-E	V4.1.0 build 130111	2560×1920	√	√
	DS-2CD783F-E(I)	V4.1.0 build 130111	2560×1920	√	√
	DS-2CD8283F-E(I)	V4.1.0 build 130111	2560×1920	√	√
	DS-2CD886BF-E	V4.0.3 build 120913	2560×1920	√	√
	DS-2CD886MF-E	V4.0.3 build 120913	2560×1920	√	√
	DS-2CD854F-E	V4.1.0 build 130111	2048×1536	√	√
	DS-2CD754F-E(I)	V4.1.0 build 130111	2048×1536	√	√
	DS-2CD8254F-E(I)	V4.1.0 build 130111	2048×1536	√	√
	DS-2CD754FWD-E(I)	V4.1.0 build 130111	1920×1080	√	√
	DS-2CD8254FWD-EIZ	V4.1.0 build 130111	1920×1080	√	√
	DS-2CD753F-E(I)	V4.1.0 build 130111	1600×1200	√	√
	DS-2CD853F-E	V4.1.0 build 130111	1600×1200	√	√
	DS-2CD8153F-E	V4.1.0 build 130111	1600×1200	√	√
	DS-2CD8253F-E(I)	V4.1.0 build 130111	1600×1200	√	√
	DS-2CD7153-E	V4.1.0 build 130111	1600×1200	√	×
	DS-2CD876BF-E	V4.0.3 build 120913	1600×1200	√	√
	DS-2CD876MF-E	V4.0.3 build 120913	1600×1200	√	√
	DS-2CD877BF	V4.0.3 build 120913	1920×1080	√	√
	DS-2CD855F-E	V4.1.0 build 130111	1920×1080	√	√
	DS-2CD752MF-E	V2.0 build 110614	1600×1200	√	√
	DS-2CD852MF-E	V2.0 build 110426			
	DS-2CD852F-E	V2.0 build 100521			
	DS-2CD862MF-E	V2.0 build 110614	1280×960	√	√
		V2.0 build 110426			
		V2.0 build 100521			
	DS-2CD846F-EI	V4.1.0 build 130111	1280×960	√	√
	DS-2CD863PF/NF-E	V4.1.0 build 130111	1280×960	√	√
	DS-2CD864FWD-E	V4.1.0 build 130111	1280×720	√	√
	DS-2CD763PF/NF-E	V4.1.0 build 130111	1280×960	√	√

Type	Model	Version	Max. Resolution	Sub-stream	Audio
	DS-2CD763PF/NF-EI	V4.1.0 build 130111	1280×960	√	√
	DS-2CD7164-E	V4.1.0 build 130111	1280×720	√	×
	DS-2CD764FWD-E(I)	V4.1.0 build 130111	1280×720	√	√
	DS-2CD8264FWD-E(I)	V4.1.0 build 130111	1280×720	√	√
	DS-2CD2012-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2112-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2212-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2312-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2032-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2132-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2232-I	V4.0.9 build 130106	1280×960	√	×
	DS-2CD2332-I	V4.0.9 build 130106	1280×960	√	×
SD Network Camera	DS-2CD7133F-E	V4.1.0 build 130111	640×480	√	×
	DS-2CD733F-E(I)	V4.1.0 build 130111	640×480	√	√
	DS-2CD833F-E	V4.1.0 build 130111	640×480	√	√
	DS-2CD8133F-E	V4.1.0 build 130111	640×480	√	√
	DS-2CD8233F-E(I)	V4.1.0 build 130111	640×480	√	√
	DS-2CD802NF DS-2CD812PF DS-2CD832F DS-2CD892PF/NF	V2.0 build 090522 V2.0 build 090715 V2.0 build 110301	704×576	√	√
	DS-2CD893PF(WD)-E	V4.1.0 build 130111	704×576	√	√
	DS-2CD793PF(WD)-E(I)	V4.1.0 build 130111	704×576	√	√
	DS-2CD793NF(WD)-E(I)	V4.1.0 build 130111	704×576	√	√
Thermal Camera	DS-2CD8313PF-E40	V3.2 build 120528	352×288	√	√
Intelligent Traffic Camera	DS-2CD9121	V3.3.0 build 130129	1600×1200	√	×
	DS-2CD9122	V3.3.0 build 130129	1920×1080	√	×
	DS-2CD9131	V3.3.0 build 130129	2048×1536	√	×
	DS-2CD9151A	V3.3.0 build 130129	2448×2048	√	×
	DS-2CD9152	V3.3.1 build 130301	2560×1920	√	×
	DS-2CD9152-H	V3.3.0 build 130120	2592×2048	√	×
	DS-2CD966(B)	V3.1.0 build 120423	1360×1024	×	×

Type	Model	Version	Max. Resolution	Sub-stream	Audio
	DS-2CD966-V(B)				
	DS-2CD976(B) DS-2CD976-V(B)	V3.1.0 build120423	1600×1200	×	×
	DS-2CD976(C)	V3.1.0 build120423	1600×1200	×	×
	DS-2CD976-V(C)	V3.1.0 build120423	1600×1200	×	×
	DS-2CD977(B) DS-2CD977(C)	V3.1 build 120423	1920×1080	×	×
	DS-2CD986A(B)	V3.1.0 build120423	2448×2048	×	×
	DS-2CD986A(C)	V3.1.0 build120423	2448×2048	×	×
	DS-2CD986C(B)	V2.3.6 build 120401	2560×1920	×	×
Network Speed Dome	DS-2DF1-572	V4.0.2 build 120813	1280×720	√	√
	DS-2DF1-57A	V4.0.2 build 120813	1280×720	√	√
	DS-2DF1-772 DS-2DM1-772 DS-2DF1-774D	V4.1.4 build 130110	1280×720	√	√
	DS-2DF7284-A DS-2DF7274-A DS-2DF5284-A DS-2DF5274-A	V4.2.4 build 130126	1280×960	√	√
	DS-2DM1-718	V2.0.1 build 110520 V3.1.2 build 121124	704×576	√	√
	DS-2DM1-518	V2.0.1 build 110520 V3.1.2 build 121124	704×576	√	√
	DS-2DF1-402	V3.1.4 build 130204	704×576	√	√
	DS-2DF1-402N	V3.1.4 build 130204	704×576	√	√
	DS-2DF1-618H	V2.0.1 build 110520 V3.1.0 build110811	704×576	√	√
	DS-2DF1-718	V2.0.1 build 110520 V3.1.2 build 121124	704×576	√	√
	DS-2DF1-518	V2.0.1 build 110520 V3.1.2 build 121124	704×576	√	√
HD Decoder	DS-6601HFHI	V1.0.4 build 130115	1920×1080	√	√
	DS-6601HFHI/L	V1.0.4 build 130115	1920×1080	√	√
SD Decoder	DS-6501HCI-SATA DS-6502HCI-SATA DS-6504HCI-SATA DS-6516HCI-SATA	V1.0.1 build 110104	704×576	×	√
	DS-6501HFI-SATA DS-6502HFI-SATA DS-6504HFI-SATA DS-6508HFI-SATA	V1.0.1 build110104	704×576	×	√

Type	Model	Version	Max. Resolution	Sub-stream	Audio
	DS-6601HCI	V1.2.0 build 120215	704×576	×	√
	DS-6602HCI				
	DS-6604HCI				
	DS-6601HFI	V1.2.0 build 120215	704×576	×	√
	DS-6602HFI				
	DS-6604HFI				

## List of Third-party IP Cameras Compatible

**Note:** ONVIF compatibility refers to the camera can be supported both when it uses the ONVIF protocol and its private protocols. **Only ONVIF is supported** refers to the camera can only be supported when it uses the ONVIF protocol. **Only AXIS is supported** refers to the function can only be supported when it uses the AXIS protocol.

IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
ACTI	TCM4301-10D-X-00083	A1D-310-V4.12.09-AC	1280×1024	×	✓
	TCM5311-11D-X-00023	A1D-310-V4.12.09-AC	1280×960	×	✓
	TCM3401-09L-X-00227	A1D-220-V3.13.16-AC	1280×1024	×	×
ARECONT	AV8185DN	65172	1600×1200	×	×
	AV1305M	65175	1280×1024	✓	×
	AV2155	65143	1600×1200	✓	×
	AV2815	65220	1920×1080	✓	×
	AV3105M	65175	1920×1080	✓	×
	AV5105	65175	1920×1080	✓	×
AXIS	M1114	5.09.1	1024×640	✓	×
	M3011(ONVIF compatibility)	5.21	704×576	✓ (Only AXIS is supported)	×
	M3014(ONVIF compatibility)	5.21.1	1280×800	✓	×
	P3301(ONVIF compatibility)	5.11.2	768×576	✓	✓ (Only AXIS is supported)
	P3304(ONVIF compatibility)	5.20	1440×900	✓	✓ (Only AXIS is supported)
	P3343(ONVIF compatibility)	5.20.1	800×600	✓	✓ (Only AXIS is supported)
	P3344(ONVIF compatibility)	5.20.1	1440×900	✓	✓ (Only AXIS is supported)
	P5532	5.15	720×576	✓	×
	Q7404	5.02	720×576	✓	✓
Bosch (ONVIF compatibility)	AutoDome Jr 800HD	39500450	1920×1080	×	✓
	NBC 265 P	07500453	1280×720	×	✓
	Dinion NBN-921-P	10500453	1280×720	×	✓
Brickcom	FB-130Np (ONVIF compatibility)	V3.1.0.8	1280×1024	×	✓
	CB-500Ap (ONVIF compatibility)	V3.2.1.3	1280×1024	×	✓

IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
Canon	compatibility)				
	WFB-100Ap	V3.1.0.9	1280×800	×	√
	VB-M400	Ver.+1.0.0	1280×960	×	√
	VB-M6000D	Ver.+1.0.0	1280×960	×	×
Panasonic	VB-M7000F	Ver.+1.0.0	1280×960	×	√
	WV-SW152(ONVIF compatibility)	Application:1.66 Image data:1.05	800×600	√	×
	WV-SC386(ONVIF compatibility)	Application:1.66 Image data:1.05	1280×960	√	√
	WV-SW155(ONVIF compatibility)	Application:1.66 Image data:1.05	1280×960	√	×
	WV-SW316(ONVIF compatibility)	Application:1.66 Image data:2.03	1280×960	√	√
	WV-SP105(ONVIF compatibility)	Application:1.66 Image data:1.03	1280×960	√	×
	WV-SF132(ONVIF compatibility)	Application:1.66 Image data:1.03	640×360	√	×
	WV-SP102(ONVIF compatibility)	Application:1.66 Image data:1.03	640×480	√	×
	WV-SP509(ONVIF compatibility)	Application:1.30 Image data:2.21	1280×960	√	√
	WV-SW559(ONVIF compatibility)	Application:1.30 Image data:2.21	1920×1080	√	√
	WV-SW558(ONVIF compatibility)	Application:1.30 Image data:2.21	1920×1080	√	×
	WV-SW355(ONVIF compatibility)	Application:1.66 Image data:1.04	1280×960	√	√
	WV-SW352(ONVIF compatibility)	Application:1.66 Image data:1.04	800×600	√	√
	WV-SF342(ONVIF compatibility)	Application:1.66 Image data:1.06	800×600	√	√
	WV-SF332(ONVIF compatibility)	Application:1.66 Image data:1.06	800×600	√	√
	WV-SF346(ONVIF compatibility)	Application:1.66 Image data:1.06	1280×960	√	√
	WV-SP306H	Application:1.34 Image data:1.06	1280×960	√	√
	WV-SP336H	Application:1.06 Image data:1.06	1280×960	√	√
PELCO	D5118	1.8.2-20120327-2.9310-A1.7852	1280×960	√	×
	IXE20DN-AAXVUU2	1.8.2-20120327-2.9081-A1.7852	1920×1080	√	×
	IX30DN-ACFZHB3	1.8.2-20120327-2.9080-A1.7852	2048×1536	√	×



IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
SAMSUNG (ONVIF compatibility)	SNB-5000P	V2.00_110727	1280×1024	√ (Only ONVIF is supported)	√
SANYO	VCC-HD2300P	2.03-02(110318-00)	1920×1080	×	×
	VCC-HD2500P	2.02-02(110208-00)	1920×1080	×	√
	VCC-HD4600P	2.03-02(110315-00)	1920×1080	×	√
SONY	SNC-CH220	1.50.00	1920×1080	×	×
	SNC-RH124(ONVIF compatibility)	1.73.00	1280×720	√	√
	SNC-EP580(ONVIF compatibility)	1.53.00	1920×1080	√	√
	SNC-DH220T(Only ONVIF is supported)	1.50.00	2048×1536	×	×
Vivotek	IP7133	0203a	640×480	×	×
	FD8134(ONVIF compatibility)	0107a	1280×800	×	×
	IP8161(ONVIF compatibility)	0104a	1600×1200	×	√
	IP8331(ONVIF compatibility)	0102a	640×480	×	×
	IP8332(ONVIF compatibility)	0105b	1280×800	×	×
ZAVIO	D5110	MG.1.6.03P8	1280×1024	√	×
	F3106	M2.1.6.03P8	1280×1024	√	√
	F3110	M2.1.6.01	1280×720	√	√
	F3206	MG.1.6.02c045	1920×1080	√	√
	F531E	LM.1.6.18P10	640×480	√	√

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